IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CIRBA INC. (d/b/a DENSIFY) and CIRBA IP, INC., Plaintiffs, v. VMWARE, INC., Defendant.	C.A. No. 19-742-LPS JURY TRIAL DEMANDED [redacted]

[PROPOSED] FINAL PRETRIAL ORDER – VOLUME 2 (EXHIBITS 11, 11A– 11F)

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EXHIBIT 11A
(Densify's Motion *in Limine* #1)

IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE

CIRBA INC. (d/b/a DENSIFY) and CIRBA IP, INC., Plaintiffs, v. VMWARE, INC., Defendant.	Civil Action No. 1:19-cv-00742-LPS JURY TRIAL DEMANDED

PLAINTIFFS' MOTION IN LIMINE #1: PAT GELSINGER

"[N]one will be offered by VMware as a witness at trial." This is what VMware represented to the Court and Densify when vehemently opposing the deposition of its executives, including its CEO Pat Gelsinger. Dkt. 277 at 1. It also represented that Mr. Gelsinger possessed no unique relevant knowledge and that he was too busy for a deposition. Based on these representations, VMware convinced the Court to limit the deposition to two hours, and Densify to agree to this limitation. Now Mr. Gelsinger is the first person on VMware's live "may call" trial witness list. Densify respectfully requests that Mr. Gelsinger not be permitted to testify at trial live in light of VMware's representations and Densify's reliance on them.

When opposing Densify's request to depose Mr. Gelsinger and the other two executives, VMware's letter brief made the following unqualified representation:

> None has unique and non-repetitive knowledge of VMware's potential acquisition of Cirba, none was listed on VMware's initial disclosures, and none will be offered by VMware as a witness at trial.

Dkt. 277 at 1. VMware emphasized that Gelsinger was a busy man with "extensive and competing demands on [his] time, and responsibilities to shareholders that go far beyond those of other employees." *Id.* Indeed, it went so far as to argue that even deposing him was "inappropriate and harassing." *Id.* The day after the Court ordered Mr. Gelsinger's deposition, VMware asked the Court to reconsider, threatening to file a writ, because Gelsinger had "a schedule that is sort of extraordinary and unbelievable." Ex. A (Nov. 1 hearing tr.) at 11:16-18, 13:3-6. In light of VMware's representations that Gelsinger had no unique knowledge and would not be called at trial, Densify agreed to limit his deposition to two hours. *Id.* at 12:15-17, 14:19-24.

As the deposition approached, VMware refused to conduct even narrow searches into Gelsinger's files for documents referencing Densify. *See* Dkt. 341, 343. Densify argued that "if Gelsinger and Raghuram are sending private e-mails to each other relating to Densify," those would

not have been captured by VMware's document collection and should be produced. Ex. B (Nov. 19 hearing tr.) at 7:12-19; *id.* at 11:6-12, 15:13-19 (VMware refusing to confirm that all such emails would have been produced). The Court agreed that such documents would be "very significant," and it would be "unusual to go depose someone, particularly a high level official at a company and not have responsive documents that they personally reviewed." *Id.* at 7:20-21, 13:13-15. The Court acknowledged that the matter presented a "surprisingly difficult" question, *id.* at 21:17-20, but ultimately did not order any searches of Gelsinger's documents, *id.* at 22:1-4.

Now, contrary to its explicit representations, VMware has listed Gelsinger as the first witness it may call at trial. *See* Ex. C (excerpt of pretrial order draft). The Third Circuit has affirmed excluding witness "testimony as a sanction for defense counsel's failure to abide by his pre-trial representation to the court and as a cautionary measure to prevent unfair surprise to the" other party. *United States v. 68.94 Acres of Land, More or Less, Situate in Kent Cty., State of Del.*, 918 F.2d 389, 396 (3d Cir. 1990) (excluding broader testimony where counsel represented that witness's testimony would be limited to certain issues); *see also Malin v. JP Morgan Chase Bank, N.A.*, No. 3:11-CV-554, 2013 WL 12123512, at *2 (E.D. Tenn. July 8, 2013) (excluding broader testimony "[a]fter plaintiffs' counsel represented at the hearing" that a witness's testimony at trial would be limited in scope). Courts require parties "to abide by [a] representation to not call" a witness. *In re Jacoby Airplane Crash*, No. CIV. 99-6073 (HAA), 2007 WL 559801, at *11 (D.N.J. Feb. 14, 2007). Allowing parties to call witnesses "contraven[ing] an explicit prior representation of counsel" necessarily "expose[s] opposing counsel to considerable prejudice." *Scott Timber, Inc. v. United States*, 93 Fed. Cl. 221, 227 (2010); *see also CCA Assocs. v. United States*, 87 Fed. Cl. 715, 720 (2009) (excluding witness whose testimony would "contraven[e] [a party's] earlier representation" at a meeting between counsel); *cf. United States v. Dist. Council of New York City & Vicinity of United*

Bhd. of Carpenters & Joiners of Am., 832 F. Supp. 644, 654 (S.D.N.Y. 1993) (where party had opposed deposition of a witness and initially represented that the witness would not be called at trial, testimony was allowed only because party had caveated that it would "reserve the right to call [the deponent] as a witness in the case" if the deposition went forward).

Here, VMware gave no caveat that it might call Gelsinger at trial if his deposition were allowed — its representation was unqualified. The Court made subsequent decisions about the scope of discovery relating to Gelsinger. And Densify made decisions in reliance upon VMware's representations, including strategic choices about what to cover in a very short deposition, which other witnesses to depose, and which discovery disputes to raise to the Court. Densify did not take a deposition that would be useful for discovery purposes or impeachment at trial — instead, it took a very limited trial deposition for purposes of playing the video excerpts at trial. It did not, for example, follow up with clarifying or limiting questions when it elicited critical admissions. VMware's bait and switch allowed it to draw out Densify's trial questions, which it then has weeks to prepare Mr. Gelsinger for, while using a short deposition to hamstring Densify's ability to set limits useful for impeachment. VMware does not like what Mr. Gelsinger admitted, so now it is trying to avoid having his deposition video played at trial by bringing him as a witness, essentially wasting the incredible time and effort expended in obtaining a trial deposition and his admissions.

Densify will be severely prejudiced and subject to ambush because it relied on VMware's representations. It is not possible to square VMware's representation that Mr. Gelsinger has no unique knowledge, was not listed in initial disclosures, and was too busy to be deposed, with the sudden possibility that he now has enough time to fly across the country and testify at trial.

Accordingly, VMware should be held to its unqualified representation, and not permitted to offer Mr. Gelsinger as a witness at trial.

Dated: December 23, 2019

Respectfully submitted,

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Exhibit A

Redacted In Its Entirety

Exhibit B

Redacted In Its Entirety

Exhibit C

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[PROPOSED] FINAL PRETRIAL ORDER

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10. If this Court determines that any issue identified in the statements of issues of fact is more properly considered an issue of law, it should be so considered.

IV. ISSUES OF LAW

11. Plaintiffs' statement of the legal issues that remain to be litigated in this case is attached at **Exhibit 4**.

12. Defendant's statement of the issues of law which it contends remain to be litigated, and its citation of authorities relied upon, is attached as **Exhibit 5**.

13. If this Court determines that any issue identified in the statements of the issues of law is more properly considered an issue of fact, it should be so considered.

V. WITNESSES

14. Any witness not listed will be precluded from testifying, absent good cause shown. Such good cause shall include, but is not limited to, testimony required to authenticate any documents subject to an authenticity objection. Subject to the notice requirements addressed herein, the listing of a witness on a party's witness list does not require that party to call that witness to testify, and does not necessarily mean that the listing party has the power to compel the live testimony of that witness. In the absence of an alternative agreement between the parties, fact witnesses will be sequestered. Any such agreement is not intended to abrogate or alter D. Del. LR 43.1. For clarity, once cross examination of a witness is concluded and the witness is passed for re-direct examination, the offering party may discuss with the witness his or her testimony on re-direct examination.

15. By 6:00 pm ET two calendar days before a witness will be called to testify live, the name of the witness will be identified by email to opposing counsel, and, if multiple witnesses are thereby identified, the expected order of presentation.

Also, unless the parties reach an alternative agreement, the order of the presentation of evidence will follow the burden of proof, i.e.: Phase I: Plaintiffs' case-in-chief on infringement and damages

Phase II: Defendant's response on infringement and damages, and case-in-chief on invalidity

Phase III: Plaintiffs' rebuttal on infringement and damages, and response on invalidity

Phase IV: Defendant's rebuttal on invalidity

A. List of Witnesses Plaintiffs Expect to Call

i. Expert witnesses

Prof. Vijay Madisetti

Jim Bergman

Vincent Mayfield

[Counsel, please identify the precise subject matter on which Plaintiffs will ask the Court to recognize the witnesses' expertise as required by Judge Stark.]

ii. Non-expert witnesses

Riyaz Somani

Andrew Hillier

Scott Browne

Gerry Smith

Chuck Tatham

Jeff Pauze

Ray Boots

Henry Jurgens

Michael Hein

Chandra Prathuri

Alex Wang

Sunny Dua

Ajay Singh

Monica Sharma

Taruna Gandhi

David Overbeek

B. **List of Witnesses Defendant Expects to Call**

16. VMware identifies the following witnesses whom it will or may call live or by prior testimony at trial, depending on the witness's availability. VMware reserves the right to call additional witnesses necessitated by the Court's pretrial or trial rulings or in response to Cirba's trial witnesses.

i. Expert Witnesses

17. Below are the expert witnesses VMware will call as live witnesses at trial, along with a disclosure of the precise subject matter on which it will ask the Court to recognize each witness's expertise:

1. Jason Nieh

a) Dr. Nieh is a technical expert with expertise in virtualization technology. Dr. Nieh will testify consistent with his expert reports, which may include testimony regarding issues of non-infringement of the '687 and '367 patents, invalidity of the '687 and '367 patents, the state of the prior art, persons of ordinary skill in the art, and their knowledge at the

time of the invention. Dr. Nieh may also rebut any opinions offered by Dr. Madisetti, Mr. Bergman, or Mr. Mayfield on matters within his areas of expertise.

2. Paul Meyer

a) Mr. Meyer is an economics expert with expertise in evaluating damages with respect to intellectual property disputes. Mr. Meyer will testify consistent with his expert report, which may include testimony regarding issues of damages measurements and reasonable royalty analysis. Mr. Meyer may also rebut any opinions offered by Dr. Madisetti, Mr. Bergman, or Mr. Mayfield on matters within his areas of expertise.

3. Michel Pham

a) Dr. Pham is an expert in the areas of trademarks, marketing, branding, and consumer behavior, especially with regard to how consumers make judgments and decisions and how they respond to marketing information and communications. Dr. Pham will testify consistent with his expert report, which may include testimony regarding whether the terms "densify," "densifying," and "densification" are descriptive and to what extent Cirba has achieved commercial strength with respect to these terms based on certain objective external indicators. Dr. Pham may also rebut any opinions offered by Dr. Madisetti, Mr. Bergman, or Mr. Mayfield on matters within his areas of expertise.

ii. Fact Witnesses

1. **Fact Witnesses VMware Will Call At Trial**

(1) Kit Colbert (live)

(2) Carl Waldspurger (live)

(3) Ajay Singh (live)

(4) Chandra Prathuri (live)

2. **Fact Witnesses VMware May Call At Trial**

(1) Pat Gelsinger (live) – testimony will be limited to the subject matter on which he was deposed

(2) Taruna Gandhi (live)

(3) Alex Wang (live)

(4) Chris Wolf (live)

(5) Andrew Hiller (live or by prior testimony)

(6) Riyaz Somani (live or by prior testimony)

(7) Gerry Smith (live or by prior testimony)

(8) Henry Jurgens (live)

(9) Tom Yuyitung (live or by prior testimony)

(10) Chuck Tatham (live or by prior testimony)

(11) Scott Browne (live or by prior testimony)

(12) Yama Habibzai (live or by prior testimony)

(13) Jeff Pauze (live or by prior testimony)

(14) Ray Boots (live or by prior testimony)

(15) Kleber Carraro (by prior testimony)

(16) Monica Sharma (by prior testimony)

C. Testimony by Deposition

1. By Plaintiff

(1) Pat Gelsinger

(2) Raghu Raghuram

(3) Greg Lavender

(4) Chandra Prathuri

(5) Alex Wang

(6) Taurna Gandhi

2. By Defendant

a. VMware's list of witnesses it may or will call by deposition may be found above. VMware's affirmative deposition designations will be exchanged on December 16, in keeping with D.I. 373.

18. Plaintiffs' deposition designations are attached as Exhibit [[ ]]. Defendant's deposition designations are attached as Exhibit [[ ]]. This pretrial order contains the maximum universe of deposition designations, counter-designations, counter-counter-designations, and objections to admission of deposition testimony; none of the foregoing shall be supplemented without approval of all parties or leave of the Court, on good cause shown.

19. Unless otherwise agreed to between the parties, the party offering deposition testimony (other than for the purpose of impeachment or cross examination) shall identify the deposition testimony intended to be offered from previously-exchanged designations by 7:00 p.m.[2] four calendar days prior to the testimony being offered into the record. The party receiving

[2] All times are Eastern Standard time.

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VMWARE'S OPPOSITION TO CIRBA'S MOTION IN LIMINE NO. 1 SEEKING TO EXCLUDE TESTIMONY BY PATRICK GELSINGER

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Cirba has not presented a compelling rationale for excluding VMware's CEO, Mr. Patrick Gelsinger, as a trial witness. Cirba deposed Mr. Gelsinger and has designated most of his deposition testimony for trial. (Ex. 1.) Cirba has also identified trial exhibits that reference Mr. Gelsinger. (*See, e.g.*, Ex. 2.) For its part, VMware has identified Mr. Gelsinger as a "may call" defense witness: whether he testifies will depend on what Cirba argues and presents at trial about matters such as VMware's acquisition discussions with Cirba in 2015. There is no basis for excluding him.

Cirba does not identify any area of inquiry that it failed to explore due to a time limitation on Mr. Gelsinger's deposition.[1] Moreover, Cirba fails to mention that VMware stated that should he be called, his "testimony will be *limited to the subject matter on which he was deposed*." (Cirba MIL No. 1 Ex. C at 9 (emphasis added).)

Cirba's motion makes much of VMware's statement in opposing Cirba's motion to obtain his apex deposition that VMware did not intend to bring Mr. Gelsinger to trial. But Cirba prevailed on that motion, and it has now, with its exhibits and deposition designations, *itself* decided to put Mr. Gelsinger's testimony at issue, despite his lack of unique knowledge regarding the acquisition discussions (*see* Ex. 1 at 11:17-12:11, 19:18-20:1, 23:16-24:21). Those discussions are themselves of minimal relevance as Cirba has no evidence that VMware copied any aspect of its technology based on the limited information Cirba shared during these discussions. Under these circumstances, VMware should be permitted to retain the option of bringing Mr. Gelsinger to trial as a live witness to address arguments or evidence put forth by Cirba on the subject matter on which he was deposed.

[1] Cirba indicated at the outset of the apex deposition hearing that it only sought "a couple of hours" for Mr. Gelsinger's deposition. (Nov. 1, 2019 Hearing Tr. at 12:15-20.)

"Courts have consistently recognized . . . that live testimony is preferable to deposition testimony, . . . even when the deposition testimony has been recorded on videotape." *Micron Tech., Inc. v. Rambus Inc.*, No. CV 00-792 (SLR), 2007 WL 9771144, at *2 (D. Del. Aug. 29, 2007); *see also Young & Assoc. Public Relations v. Delta Air Lines*, 216 F.R.D. 521, 522 (D. Utah 2003) ("The preference for live testimony at trial rather than deposition testimony as a substitute is uniformly stressed in case law."). Courts have also permitted witnesses to appear live despite counsel's previous representations to the contrary if, as here, the witness has been deposed. *See Burrell v. Harley Davidson Motor Co., Inc.*, No. CV 11-393 JP/RHS, 2013 WL 12089503, at *5 (D.N.M. Jan. 23, 2013) (denying motion to exclude witness that Plaintiff's counsel previously represented "would not testify, but [the witness] is now included in Plaintiff's Third Witness List" because "Defendants were able to take [the witness'] deposition during the discovery period" so there is no unfair prejudice).

Having persuaded the Court that Mr. Gelsinger's testimony was of sufficient potential relevance to obtain a deposition, Cirba now seeks to bar him from testifying live despite relying upon his deposition testimony. This contradiction is nonsensical and unfair. None of Cirba's cases hold that witnesses in Mr. Gelsinger's circumstances should be prevented from testifying. *See In re Jacoby Airplane Crash*, No. CIV. 99-6073 (HAA), 2007 WL 559801, at *11 (D.N.J. Feb. 14, 2007) (denying motion to exclude witness whose existence was not disclosed until the pretrial order but noting that since the witness was offered only to rebut evidence that defendant also sought to exclude by a motion *in limine*, the "Court expects [Defendant] to abide by its representation to not call [the witness] if the [] evidence is later excluded by this Court."); *Scott Timber, Inc. v. United States*, 93 Fed. Cl. 221, 227 (2010) (denying motion to exclude late disclosed expert witness); *Malin v. JP Morgan Chase Bank, N.A.*, No. 3:11-CV-554, 2013 WL

12123512, at *2 n.1 (E.D. Tenn. July 8, 2013) (noting that the magistrate judge "granted [Defendant's] motion to exclude Mr. Malin from testifying as an expert" "by agreement of the parties" after "plaintiffs' counsel represented at the [Motion to Exclude hearing] that Mr. Malin would testify as a fact witness."); *CCA Assocs. v. United States*, 87 Fed. Cl. 715, 720 (2009) (limiting expert testimony to substance previously disclosed in expert reports provided before the pretrial order); *United States v. 68.94 Acres of Land, More or Less, Situate in Kent Cty., State of Del.*, 918 F.2d 389, 396 (3d Cir. 1990) (excluding expert testimony "as a sanction for the failure to comply with the court's pre-trial order restricting the bases of [the expert's] opinion.").

In sum, Cirba has not cited any case holding that a fact witness should be prevented from testifying live at trial where, as here, the party had an opportunity to question the witness before trial. The strong preference for live testimony greatly outweighs any purported prejudice to Cirba. Moreover, as another means to avoid any prejudice to Cirba, VMware has already agreed that any live testimony from Mr. Gelsinger will be limited to the subject matter already covered during his deposition. Cirba should not be permitted to challenge VMware's conduct in corporate matters but then say that its CEO should not be allowed to appear live to defend the company. VMware should be permitted to call Mr. Gelsinger live at trial to address arguments or evidence put forth by Cirba.

Dated: December 30, 2019

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Exhibit 1

Redacted In Its Entirety

Exhibit 2

Redacted In Its Entirety

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CIRBA INC. (d/b/a DENSIFY) and CIRBA IP, INC., Plaintiffs, v. VMWARE, INC., Defendant.	Civil Action No. 1:19-cv-00742-LPS JURY TRIAL DEMANDED

PLAINTIFFS' REPLY TO THEIR MOTION IN LIMINE NO 1: PAT GELSINGER

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The question here is integrity of the process, not prejudice. VMware represented that Gelsinger would not be offered by VMware at trial. That should be the end of the matter — it is not a question of Densify now having to demonstrate prejudice from VMware's misrepresentation or change of heart. The reality is that Gelsinger's testimony did not go well for VMware, and it now seeks to negate it by bringing him to trial and starting over. It should be held to its word.

But regardless, Densify has been concretely prejudiced. First, Densify would not have agreed to a 2-hour time limit, in order to cover more topics and in greater depth. Second, Densify would have asked different questions — focusing on those necessary for impeachment at trial so Gelsinger could not walk back his testimony. For example, Gelsinger testified that VMware's valuation of Densify was in the [redacted] Ex. D at 23:9-15. If Densify thought Gelsinger might testify at trial, Densify would have asked, for example, whether he disagreed with the valuation. Third, Densify would have been entitled to production of Gelsinger's documents (and the Court might have ruled differently on that issue). Fourth, Densify would have avoided previewing its lines of cross-examination, so that VMware could not prepare Gelsinger for weeks about how to answer at trial. In short, a lawyer takes a very different deposition when a witness will appear at trial.[1] VMware's misrepresentation was prejudicial.

VMware's suggestion of limiting the subject matter of Gelsinger's testimony is self-serving, not compromise. VMware obviously wants to add new facts, or else it would be satisfied with excerpts from the deposition, while at the same time limiting the scope of Densify's cross examination.[2] Demanding Gelsinger now testify when he had no time for this process before is well-beyond the pale given VMware's stridency in opposing this deposition. It should be held to its word.

[1] *Burrell*, 2013 WL 12089503, is beside the point. The court allowed a live witness because whether there *was* a misrepresentation was disputed — there was no record of it, unlike here.
[2] At a minimum, *Densify* should not be limited to deposition topics if Gelsinger testifies at trial.

Date: January 2, 2020

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Exhibit D

Redacted In Its Entirety

EXHIBIT 11B
(Densify's Motion *in Limine* #2)

IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE

CIRBA INC. (d/b/a DENSIFY) and CIRBA IP, INC., Plaintiffs, v. VMWARE, INC., Defendant.	Civil Action No. 1:19-cv-00742-LPS JURY TRIAL DEMANDED

PLAINTIFFS' MOTION IN LIMINE #2: TELEMETRY DATA

VMware seeks to rely on summary charts of telemetry data to prove a low percentage of customers use the accused features. Its telemetry data are a survey including only a small sampling of customers. To be admissible, the survey must have been conducted with generally accepted survey methodology, which includes being representative and statistically reliable. VMware cannot meet its burden of showing its data sampling and summary statistics are reliable, and therefore its telemetry charts and testimony, and underlying data, should be excluded.[1]

I. VMware's Summary Chart Is Inadmissible Under FRE 1006.

Under Rule 1006, when a party uses a "summary" or "chart" to "prove the content of voluminous" materials, it "must make the originals or duplicates available for examination or copying. . . ." These underlying materials must be admissible. *United States v. Manamela*, 463 F. App'x 127, 132 (3d Cir. 2012). Production of the supporting data is critical to the "underlying purpose" of the disclosure rule: "to allow the opposing party a reasonable opportunity to assess the accuracy and admissibility of the summaries." *E. Trading Co. v. Refco, Inc.*, 1999 WL 59979, at *3 (N.D. Ill. Feb. 2, 1999); *see also United States v. Lynch*, 735 F. App'x 780, 786 (3d Cir. 2018). Exclusion is warranted by the "prejudice" "from allowing [a party] to testify" about aggregated data that the opposing party "had no means of verifying or disputing." *Kam Hing Enterprises, Inc. v. Wal-Mart Stores, Inc.*, 359 F. App'x 235, 238 (2d Cir. 2010). Here, VMware has prepared a set of charts summarizing telemetry data. *See* Ex. A; Ex. B. Because VMware has not produced the data underlying its summary charts, the summary presentations are inadmissible.

II. The Telemetry Data Do Not Meet the Requirements for Survey Reliability.

VMware's telemetry data is unreliable and inadmissible under Rule 403. VMware has the

[1] Evidentiary admissibility is distinct from exclusion as a discovery sanction. Densify seeks exclusion because VMware has not met its burden of admissibility, which does not depend on whether Densify filed a motion to compel telemetry data. *See, e.g.*, *Deckers Outdoor Corp. v. Romeo & Juliette, Inc.*, 2017 WL 5634993, at *3 (C.D. Cal. Oct. 6, 2017).

burden of establishing the admissibility of its telemetry data. *Pittsburgh Press Club v. United States*, 579 F.2d 751, 758 (3d Cir. 1978); *Scott v. Infostaf Consulting, Inc.*, 2011 WL 855347, at *1 (W.D. Pa. Mar. 9, 2011). Surveys and polls are reliable only "if the poll is conducted in accordance with generally accepted survey principles, and if the results are used in a statistically correct way, since proper survey and statistical methods are intended to assure a poll's reliability." *Pittsburgh Press Club*, 579 F.2d at 758. Summary data such as surveys are inadmissible when parties attempt to draw unsupported conclusions — for good reason: the prejudice of such data far outweighs any probative value because the summaries are not reliable. This is particularly true when the data sample is not representative of the relevant population. *See, e.g.*, *Lanphere Enterprises, Inc. v. Jiffy Lube Int'l Inc.*, 138 F. App'x 20, 23 (9th Cir. 2005) (affirming exclusion when "there was too great an analytical gap between its conclusions and the underlying data"); *Turner v. Allstate Ins. Co.*, 902 F.2d 1208, 1213 (6th Cir. 1990) (affirming exclusion of data where the sampled customers differed in relevant ways from the customers at issue in the case, and "could not be compared as though identical"); *Richardson by Richardson v. Richardson-Merrell, Inc.*, 857 F.2d 823, 829 (D.C. Cir. 1988); *Am. Bearing Co. v. Litton Indus., Inc.*, 540 F. Supp. 1163, 1172 (E.D. Pa. 1982), aff'd 729 F.2d 943 (3d Cir. 1984) (excluding market share analysis where data not representative).

Here, VMware cannot meet its burden of establishing that its sample of VMware users is statistically correct and reliable or that it relies on accepted survey principles. The data are not representative — a fact evidenced from VMware's own materials. *See* Ex. C; Ex. D; Ex. E; Ex. F. There is no evidence that, among many other things:

- the sample of customers participating in telemetry is large enough to reach statistically valid conclusions about the total pool of VMware's customers;
- customers participate in telemetry for a meaningful period of time;
- the sample is representative of non-participating customers, including larger customers (who are most likely to use the accused features);

- the sample of customers participating is randomized and not self-selected;
- the data concerns all relevant features rather than a misleading subset.

Quantitative analysis is only as useful as the data that underlie it. For example, Densify could not sample ten customers who use the accused features and then claim that 100% of all customers use them. If the data sample is flawed, conclusions from it are not accurate, and would prejudice the jury if presented as "fact." Without VMware showing the sample is representative and reliable, the lack of probative value is outweighed by the unfair prejudice of using the data. *See, e.g.*, *Medisim Ltd. v. BestMed LLC*, 861 F. Supp. 2d 158, 167 (S.D.N.Y. 2012), on reconsideration in part, 2012 WL 1450420 (S.D.N.Y. Apr. 23, 2012) (collecting cases excluding methodologically flawed surveys).

III. The Telemetry Data Are Inadmissible as Lay Opinion Testimony Under Rule 701.

Furthermore, expert survey data cannot be introduced by lay witnesses. A lay witness may not testify "based on scientific, technical, or other specialized knowledge within the scope of Rule 702." Fed. R. Ev. 701. "Rule 1006 is 'not a back-door vehicle for the introduction of evidence which is otherwise inadmissible.'" *Eichorn v. AT&T Corp.*, 484 F.3d 644, 650 (3d Cir. 2007) (quotation omitted). Instead, the Third Circuit has held that when calculations "go beyond the data they summarize[]," requiring "assumptions" and "inferences," they "represent [the witness's] opinion, rather than the underlying information," and must be "subject to the rules governing opinion testimony." *Id.*; *see also CollegeSource, Inc. v. AcademyOne, Inc.*, 597 F. App'x 116, 124 (3d Cir. 2015) (affirming treatment of summary charts as expert materials because of "the complexity of the proffered materials, the apparent discretion exercised by [the witness] in compiling the many charts included as exhibits, and the conclusory nature of what the purported 'summaries' reveal"). An expert would not be permitted to testify to unreliable statistics without a showing that the methodology was scientifically sound. Such requirements cannot be avoided by introducing flawed surveys through a nominally lay witness.

Dated: December 23, 2019

Respectfully submitted,

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Exhibit A

Redacted In Its Entirety

Exhibit B

Redacted In Its Entirety

Exhibit C

Redacted In Its Entirety

Exhibit D

Redacted In Its Entirety

Exhibit E

Redacted In Its Entirety

Exhibit F

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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CIRBA INC. (d/b/a DENSIFY) and CIRBA IP, INC., *Plaintiffs*, v. VMWARE, INC., *Defendant*.	C.A. No. 19-742-LPS **HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY**

VMWARE'S OPPOSITION TO CIRBA'S MOTION IN LIMINE NO. 2
TO EXCLUDE TELEMETRY DATA

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Though the Court denied Cirba's prior motion to exclude VMware's telemetry data, Cirba again seeks improperly to exclude the most reliable evidence regarding the lack of use of the accused features by mischaracterizing that data.[1]

I. Telemetry Data Is Not a Survey.

VMware's telemetry data is not survey data. It is not questioning or polling customers; it is merely reporting data that was collected contemporaneously as part of VMware's regular course of business. [redacted] (*Id*. ¶¶ 4-9; Ex. 1 at 128:14-129:23; Ex. 2 at 140:9-142:7.) [redacted] Even Cirba's own expert relies upon it. (Ex. 6 ¶ 176.)

Courts have admitted, and experts have relied on, telemetry data in analogous circumstances. In *Intelligent Verification Sys., LLC v. Microsoft Corp.*, for example, the court denied a motion to exclude telemetry data, summaries of telemetry data, or expert reliance on

[1] Cirba's authorities do not support its positions. Unlike here, the parties offering the excluded data did not produce it during discovery, *see, e.g.*, *Kam Hing Enters. v. Wal-Mart Stores, Inc.* and *Eichorn v. AT&T Corp.*, and *Eastern Trading Co. v. Refco, Inc.*, or did not produce in the manner it was maintained, *see, e.g.*, C*ollegeSource, Inc*. *v. AcademyOne, Inc.*, *Deckers Outdoor Corp*. *v. Romeo & Juliette, Inc*. Unlike Cirba's survey cases, which included irrelevant populations (*e.g.*, *Medisim Ltd. V. BestMed, LLC*) or questions to persons interested in skewing the results (*e.g.*, *Pittsburgh Press Club v. U.S.*), only actual customers report telemetry, and they have no ability to skew reporting. Some of Cirba's authorities even support VMware. For example, *U.S. v. Lynch* found that a lay witness can explain a summary of evidence that he created and *Scott v. Infostaf Consulting, Inc.* found that lay witness testimony was not improper expert opinion when it was within the lay witness's experience. Mr. Prathuri regularly uses VMware's telemetry data in the regular course of business, understands how it is collected, and can testify to the accuracy of the numbers.

[2] The Court previously received exhibits 3-4, 7, 10-14 and telemetry data natively. (D.I. 388).

such data. No. 2:12-cv-525, 2015 U.S. Dist. LEXIS 43042, at *32-33 (E.D. Va. Mar. 31, 2015); *see also LG Display Co., Ltd. v. AU Optronics Corp.*, 265 F.R.D. 199, 202 (D. Del. 2010) (declining to exclude database spreadsheets even where underlying data were not produced but movant "had the opportunity to, and did, explore [the spreadsheets and related theories] with [the witness] during his deposition"). Here, VMware collects all telemetry data in the ordinary course of business, and it produced all relevant data to Cirba as output from the telemetry database in response to VMware's disclosed queries. As previously explained, VMware went to great lengths to provide Cirba telemetry information and any necessary context. (D.I. 386 at 1; D.I. 387.) VMware produced schemas listing the information in the database and offered to run queries for Cirba. (Exs. 7 and 8.) VMware ran Cirba's requested queries, which returned no results. (Ex. 9.) Cirba never moved to compel access to other data.

II. VMware Produced All Relevant Underlying Telemetry Data.

Cirba's argument that VMware provided only a summary and not the underlying data is flat wrong. In *Davita Healthcare Partners, Inc. v. U.S.*, the court held that top-level data and related, more comprehensive spreadsheets are "not summaries of other underlying data but [are] themselves information stored in the ordinary course of business and assembled in a workable format for production." 125 Fed. Cl. 394, 403 (2016) (expressing skepticism that production of a subset of data from a larger dataset should be deemed a Rule 1006 summary). The PowerPoints Cirba challenges are the same: data pulled directly from VMware's telemetry database detailing usage of accused VMware features and formatted for ease of production.[3]

Even if the PowerPoints *were* summaries, the spreadsheets that VMware produced *are*

[3] For example, Cirba's Exhibit A includes a slide where simple math was performed on the data, as disclosed on the slide itself and discussed by Mr. Prathuri during his deposition. (Cirba Exhibit A at 2; Ex. 1 at 143:1-146:23.)

the underlying data, produced unaltered from the telemetry database, in response to VMware's queries. [redacted] corresponds to the information on slides 5-7 and 11-14 of Cirba's Exhibit A and is the data underlying the numbers on slide 2 of that exhibit.

This underlying data was produced during fact discovery before Cirba deposed VMware's designee on telemetry data, Mr. Prathuri, on November 26, 2019.[4] Mr. Prathuri answered all of Cirba's numerous telemetry questions, (*see* Ex. 1 at 128-148) and Cirba did not request another deponent on telemetry or hold his deposition open. At trial, Mr. Prathuri will offer factual testimony regarding VMware's telemetry data consistent with his deposition. Mr. Prathuri will not offer "expert" opinions.

III. Cirba Seeks to Rely Only On Outdated Information.

By contrast, Cirba seeks to rely on outdated data from a 2015 presentation, even though Mr. Prathuri testified that he could not verify the sources of this data or that the data was reliable. (Ex. 1 at 23:3-25:4.) After his deposition, Mr. Prathuri confirmed that VMware no longer relies on the data sources used for the presentation as they are unreliable and unrepresentative. (*See* Prathuri Decl. ¶ 10.) Yet Cirba seeks to mislead the jury by ensuring that the unreliable data in these old presentations are the only data the jury sees. Cirba should not be permitted to mislead the jury by excluding the best and most reliable evidence of actual use of the accused features.

[4] (*See* Ex. 12 [redacted].)

Dated: December 30, 2019

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Exhibit 1

Redacted In Its Entirety

Exhibit 2

Redacted In Its Entirety

Exhibit 3

VMW00720835
NATIVE DOCUMENT ON CD (D.I. 388)

Exhibit 4

VMW01219278
NATIVE DOCUMENT ON CD (D.I. 388)

Exhibit 5

Redacted In Its Entirety

Exhibit 6

Redacted In Its Entirety

Exhibit 7

VMW01819128
NATIVE DOCUMENT ON CD (D.I. 388)

Exhibit 8

Redacted In Its Entirety

Exhibit 9

Redacted In Its Entirety

Exhibit 10

VMW01819041
NATIVE DOCUMENT ON CD (D.I. 388)

Exhibit 11

VMW01819042
NATIVE DOCUMENT ON CD (D.I. 388)

Exhibit 12

VMW01819036
NATIVE DOCUMENT ON CD (D.I. 388)

Exhibit 13

VMW01819037
NATIVE DOCUMENT ON CD (D.I. 388)

Exhibit 14

VMW01219277
NATIVE DOCUMENT ON CD (D.I. 388)

Exhibit 15

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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CIRBA INC. (d/b/a DENSIFY) and CIRBA IP, INC., Plaintiffs, v. VMWARE, INC., Defendant.	Civil Action No. 1:19-cv-00742-LPS JURY TRIAL DEMANDED

PLAINTIFFS' REPLY TO THEIR MOTION IN LIMINE NO 2: TELEMETRY DATA

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VMware wants to rely on PowerPoints and excel sheets created for this litigation that summarize survey data it has not provided. VMware has not met its burden of showing that the summaries are scientifically sound, their admission would not be prejudicial (Rule 403), and they are supported by produced, admissible business records (Rule 1006).

As for Rule 1006, the question Densify poses is simple: what is the source of the numbers in the summaries? Although VMware insists that it "produced all relevant data to Cirba as output from the telemetry database," Opp. at 2, neither VMware nor its expert[1] can identify such documents. As to the vROps summary, Densify Ex. B, VMware does not even attempt to give a source for the numbers, which should end the matter. As to the DRS summary, Densify Ex. A, VMware says that "the information on slides 5-7 and 11-14" and "the data underlying the numbers on slide 2" all come from the same place: [redacted] this spreadsheet contains *no data*, but is only a list of data fields – actual data is still missing. Thus, VMware has failed to identify "the underlying document on which the [PowerPoints] are based," so those summary PowerPoints are inadmissible. *See Kam Hing Enters.*, 359 F. App'x at 238.

VMware's cases do not support admitting litigation-driven summaries without underlying business records. Instead, in all three cases (*Davita*, *Intelligent Verification Sys.*, and *LG Display*), either the document showed the underlying data or the summary was kept in the course of business. VMware's PowerPoints, in contrast, are not business records—they are litigation-created documents with graphs and summary tables advocating VMware's legal positions, with no way to verify. *See* Ex. G at 158:22-159:4. VMware failure identify supporting business records precludes their use.[2]

[1] VMware's expert witness could not identify the source data, which he never saw. *See* Ex. G at 159:23-162:17, 170:7-171:5, 174:13-17. He relied on "the compiled data," "understanding that VMware will sponsor the [underlying] information to the court." *Id.* at 156:13-17, 157:23-158:3.
[2] Rule 403 precludes VMware's summary charts for the reasons set forth in Densify's opening brief.

Date: January 2, 2020

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Exhibit G

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EXHIBIT 11C
(Densify's Motion *in Limine* #3)

IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE

CIRBA INC. (d/b/a DENSIFY) and CIRBA IP, INC., Plaintiffs, v. VMWARE, INC., Defendant.	Civil Action No. 1:19-cv-00742-LPS JURY TRIAL DEMANDED

PLAINTIFFS' MOTION IN LIMINE #3: CARL WALDSPURGER'S §102(G) DEFENSE

VMware seeks to present testimony of Carl Waldspurger to assert a §102(g) defense, claiming he "invented" certain technology before Densify. This testimony should be excluded because VMware has not met its burden of corroboration necessary to establish a §102(g) defense. As such, the testimony should be excluded as irrelevant and as substantially outweighed by a danger of unfair prejudice, confusing the issues, and misleading the jury under Rule 403.

Mr. Waldspurger, a former VMware employee, allegedly worked on VMware's prior art "DRS 2006" system. Incredibly, Mr. Waldspurger has been a consultant for VMware's counsel since May, yet was not listed in its initial disclosures until October 11, and was never identified in response to interrogatories directly on point.[1] VMware now claims that he "invented" VM-host affinity and anti-affinity rules—a key element missing from VMware's DRS 2006 product. VMware's expert, Jason Nieh, relies on conversations with Waldspurger and two documents, both dated after the relevant date, to allege a §102(g) defense based on VMware's "secret" invention.

I. Waldspurger's Testimony Is Legally Insufficient To Establish A §102(g) Defense.

Testimony in support of a §102(g) defense must be corroborated. "[T]he case law is unequivocal that an inventor's testimony respecting the facts surrounding a claim of derivation or priority of invention cannot, standing alone, rise to the level of clear and convincing proof. Throughout the history of the determination of patent rights, oral testimony by an alleged inventor asserting priority over a patentee's rights is regarded with skepticism, . . . and as a result, such inventor testimony must be supported by some type of corroborating evidence." *Price v. Symsek*, 988 F.2d 1187, 1194 (Fed. Cir. 1993) (internal citations omitted).

[1] *See* Densify's Interrogatory No. 2 (Ex. 1 at 16) (requesting identity of witnesses on which VMware intends to rely to support its invalidity contention). VMware responded to this interrogatory four times, including on November 27, never identifying Waldspurger. *See id.*at 16-19. In fact, in interrogatory responses served just *two days before Dr. Nieh's report* in which it relied on Waldspurger for this key invalidity testimony, VMware continued to omit any mention of Waldspurger as the architect of DRS or an anticipation witness.

Dr. Waldspurger claims that he thought about the feature of VM-Host affinity and anti-affinity rules, which was not released in DRS until 2010, "probably around 2003." Ex. 2 (Rough Dep. Tr. of Waldspurger) at 47:13-17). The Nieh Report relies on conversations with Waldspurger and cites one document, dated *after* the filing of the '687 patent application. Ex. 3 (Excerpted Nieh Rep.) at 30, 65-67. *See Apator Militors ApS v. Kamstrup A/S*, 887 F.3d 1293, 1295 (Fed. Cir. 2018) (inventor testimony insufficiently corroborated by unwitnessed emails with inadequate date information); *Kolcraft Enterprises v. Graco Children's Prods*., 927 F.3d 1320, 1325-26 (Fed. Cir. 2019) (inventor testimony insufficiently corroborated by undated documents).

The allegedly corroborating document is a "wiki page," which allowed for "collaborative editing" within VMware, and states that it was "last modified on March 1, 2008," after the relevant date. Ex. 4. Dr. Waldspurger did not know if there was a modification on March 1, 2008, if there was version control, or if the document was changed. Ex. 2 at 49:25-50:19. Without corroboration, Waldspurger's testimony about VMware's alleged invention has no probative value.[2] Indeed, "there is a very heavy burden to be met by one challenging validity when the only evidence is the oral testimony of interested persons and their friends, particularly as to long-past events." *Woodland Tr. v. Flowertree Nursery, Inc.*, 148 F.3d 1368, 1371 (Fed. Cir. 1998). *See also Kenexa Brassring, Inc. v. Taleo Corp.*, 751 F. Supp. 2d 735, 754 (D. Del. 2010).

[2] Moreover, there is no evidence of when a reduction to practice took place (*see* Ex. 2 at 55:17-24 (not knowing when prototype developed)), nor is there evidence of diligence after 2003 (*see* Ex. 2 at 55:12-16 ("I'm not saying that it was something people were continuously working on for a couple of years.")). Diligence coupled with reduction to practice before the relevant date is required. Pre-AIA 35 U.S.C. §102(g)(2). In addition, an inventor cannot abandon, suppress, or conceal the invention. *Id*. Waldspurger testified, and his 2012 paper confirms, that VMware thought VM-host affinity and anti-affinity rules were "something [he] would regret if [he] added it at that time [to DRS]. Ex. 2 at 51:16-52:21. And if not part of a system which contains each and every element, there is no §102(g) defense.

II. Waldspurger's Testimony Regarding "Prior Invention" Should Be Excluded

Dr. Nieh's conclusion is based only on one document without the requisite date and two short conversations with Waldspurger. *See* Ex. 2 at 18:2-19:11, 20:17-21:6 (testifying that each conversation lasted less than an hour); 23:3-6. Waldspurger further testified that even though these conversations took place in late November, he does not remember whether he told Nieh that he "invented VM-host affinity and anti-affinity rules, although those rules were not released in a commercial" release in 2006. *Id.* at 46:6-19. He could not recall specifically what particular things Dr. Nieh asked about, other than the DRS code generally. *Id.* at 56:13-18. Waldspurger's testimony is the lynchpin of Dr. Nieh's § 102(g) argument, but the witness whose testimony he relied upon does not even remember talking to him about it, and thus Densify's counsel could not explore it in deposition.

Because Waldspurger's uncorroborated testimony—as a matter of law—cannot support the 102(g) defense, his testimony can serve no purpose and should simply be excluded. It has no probative value on its own, but it does confuse the issues, mislead, and waste time. *See* Fed. R. Evid. 403. Here, the jury will be confused to believe that VMware's allegation as to prior invention has some legal meaning, which as a matter of law it does not. Exclusion is especially appropriate because this defense based on Waldspurger's testimony was suppressed until after the close of discovery, precluding Densify from taking meaningful discovery on it though follow up written discovery and examination of technical documentation. *See* Fed. R. Civ. P. 26(c) (requiring timely supplementation of discovery responses) and 37(c)(1) (requiring exclusion unless the failure to respond to discovery was substantially justified or harmless).

Dated: December 23, 2019 Respectfully submitted,

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EXHIBIT 1

Redacted In Its Entirety

EXHIBIT 2

Redacted In Its Entirety

EXHIBIT 3

Redacted In Its Entirety

EXHIBIT 4

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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CIRBA INC. (d/b/a DENSIFY) and CIRBA IP, INC., *Plaintiffs*, v. VMWARE, INC., *Defendant*.	C.A. No. 19-742-LPS **HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY**

VMWARE'S OPPOSITION TO CIRBA'S MOTION IN LIMINE NO. 3: CARL WALDSPURGER'S § 102(G) DEFENSE

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The Court has already found "no basis to exclude Dr. Waldspurger," who will offer testimony about his factual knowledge of DRS—a product that both predates Cirba's alleged invention *and* allegedly infringes. (Ex. 1 at 69:3-14.) The sole basis for Cirba's attempt at a do over is that Dr. Waldspurger's testimony is *insufficiently* corroborated. But the sufficiency of corroborating evidence is an issue for the trier of fact weighed under a "rule of reason" analysis and should, at most, be addressed via a jury instruction. Cirba offers no reason to exclude Dr. Waldspurger's testimony and prevent the jury from making that evaluation. Regardless, Dr. Waldspurger's testimony is sufficiently corroborated by contemporaneous documentary evidence. Finally, allowing Dr. Waldspurger to testify would not prejudice Cirba. As the Court has recognized, Cirba has known of Dr. Waldspurger and his relevance since the start of the case. (*Id*. at 69:7-10.) Cirba has also taken his deposition. Its motion should be denied.

I. Dr. Waldspurger's Testimony About his Factual Knowledge of DRS Is Relevant.

The Court previously stated that "it would be important for the jury to hear" Dr. Waldspurger's testimony. (*Id*. at 69:6-7.) As the inventor of DRS, Dr. Waldspurger will explain why and how he invented DRS and what functionality it provides. (*Id*. at 69:3-14.) Cirba is incorrect that Dr. Waldspurger, as a fact witness, will testify about VMware's invalidity defense under § 102(g). Dr. Waldspurger will testify only about his *factual* knowledge as DRS's chief architect. VMware's expert, Dr. Nieh, will testify about VMware's invalidity defenses. Cirba has also had ample opportunity to explore Dr. Waldspurger's potential testimony. It chose not to depose Dr. Waldspurger during discovery, but sought to reopen discovery to depose him only four weeks before trial. Cirba then deposed Dr. Waldspurger for just *1 hour and 18 minutes* – far less than the 3.5 hours for which the Court ordered he be made available. (*Id*. at 68:6-69:14.)

II. Exclusion of Testimony Based on "Insufficient" Corroboration Is Unwarranted.

Cirba's argument fails to recognize the distinction between the *existence* of corroborating

evidence and the *sufficiency* of corroborating evidence. Cirba does not dispute that corroborating evidence exists, but argues that Dr. Waldspurger's testimony should be excluded because the corroborating evidence is "insufficient." Cirba's argument misses the mark. Whether the corroborating evidence is sufficient to meet the standard for proving invalidity is an issue for the trier of fact to weigh under a "rule of reason" analysis under the totality of the circumstances. *Trovan, Ltd. v. Sokymat SA, Irori*, 299 F.3d 1292, 1302 (Fed. Cir. 2002).

Regardless, Dr. Waldspurger's testimony is sufficiently corroborated by contemporaneous documentary evidence. For example, the 2004 Wiki document, [redacted] (Ex. 2 at VMW00100381.) It was retrieved from VMware's Wiki [redacted]. (*Id*. at VMW00100379 and -403.) The 2004 Wiki document is dated "21 May 2004," more than three years before Cirba's alleged conception date for the invention claimed in the '687 patent. (*Id*. at VMW00100403.) The 2004 Wiki document discloses VM-host affinity rules: [redacted] (*Id.* at VMW00100382; Ex. 3 at 51:20-52:13.) The 2004 Wiki document was also identified in VMware's invalidity contentions as disclosing affinity and anti-affinity rules. (Ex. 4 at 5.)

Cirba does not dispute that the 2004 Wiki document discloses the VM-host affinity rules, but claims it is "insufficient" to corroborate Dr. Waldspurger's testimony because it was allegedly "last modified on March 1, 2008." But the 2006 version of the Wiki shows that the purported 2008 modification was not related to VM-host affinity rules (Ex. 6 at 1 and 25) and Cirba offers no evidence to the contrary. The Wiki document thus sufficiently corroborates Dr.

Waldspurger's testimony that he conceived of the VM-host affinity rules "around 2003." (Ex. 3 at 48:13-21.) In addition, contrary to Cirba's assertion, there is evidence of reasonable diligence towards reduction to practice and VMware did not abandon, suppress, or conceal its invention of the VM-host affinity rules since it was implemented in VMware's prototype. (*Id*. at 56:6-21.)

Neither case relied on by Cirba justifies exclusion here. Both cases affirmed a finding by the PTAB that an appellant failed to sufficiently corroborate an inventor's testimony of conception. *Kolcraft Enters., Inc. v. Graco Children's Prods., Inc.*, 927 F.3d 1320, 1325 (Fed. Cir. 2019) (finding corroborating evidence "undated and lack any showing of authorship"); *Apator Miitors ApS v. Kamstrup A/S*, 887 F.3d 1293, 1294 (Fed. Cir. 2018) (finding unwitnessed emails missing relevant attachments and no evidence the unwitnessed drawings created earlier than the date of the drawings). Thus, in both cases the trier of fact (the PTAB) heard the evidence of prior conception and corroboration and reached a conclusion about its sufficiency.

III. Allowing Dr. Waldspurger's Testimony Would Not Prejudice Cirba.

Excluding Dr. Waldspurger's testimony would prejudice VMware, as it would handicap VMware's ability to present evidence relevant to its defenses. Cirba, by contrast, would suffer no prejudice from this evidence. As the Court found, Cirba has known of Dr. Waldspurger and his relevance since the start of this case. (D.I. 386 at 2-3.) VMware disclosed Dr. Waldspurger on its Rule 26 disclosures and as one of its likely trial witnesses, and relied on prior art identifying Dr. Waldspurger as a named inventor or author during the preliminary injunction phase and in its invalidity contentions. (*Id*.) Despite VMware's disclosure of Dr. Waldspurger and the 2004 Wiki document, Cirba did not challenge VMware's prior invention of VM-host affinity rules as prior art. (Ex. 5 at 5, 20-33.) Cirba's own expert also relies on Dr. Waldspurger's 2012 DRS paper for both infringement and validity. (D.I. 386 at 2-3.) In any event, Cirba's alleged prejudice, if any, was remedied by Dr. Waldspurger's deposition.

Dated: December 30, 2019

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Exhibit 1

IN THE UNITED STATES DISTRICT COURT

IN AND FOR THE DISTRICT OF DELAWARE

- - -

CIRBA INC. (d/b/a DENSIFY) and CIRBA IP, INC.,

Plaintiffs,

v

VMWARE, INC.,

Defendant.

: CIVIL ACTION

: NO. 19-742-LPS

- - -

Wilmington, Delaware
Tuesday, December 17, 2019
Discovery Conference

- - -

BEFORE: HONORABLE LEONARD P. STARK, Chief Judge

APPEARANCES:

- - -

MORRIS JAMES, LLP
BY: KENNETH L. DORSNEY, ESQ.

and

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Counsel for Plaintiff

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and

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Counsel for VMware, Inc.

- oOo -

P R O C E E D I N G S

(REPORTER'S NOTE: The following discovery conference was held in open court, beginning at 4:19 p.m.)

THE COURT: Good afternoon.

MR. DORSNEY: Good afternoon, Your Honor.

THE COURT: We have a number of issues so I decided to move you into here for today.

You can go ahead and put your appearances on the record.

MR. DORSNEY: Good afternoon, Your Honor.

THE COURT: Good afternoon.

MR. DORSNEY: On behalf of Cirba, Inc., and Cirba IP, Inc., doing business as Densify, Ken Dorsey from Morris James. With me at counsel table from Reichman

argument that this evidence shouldn't come in. It's fine to try to persuade me of that if you want. But the arguments today did not come close to persuading me that I should exclude this evidence.

That was the first issue.

The second issue, the plaintiff is seeking an order to exclude the witness, Dr. Waldspurger were to get an seven-hour deposition.

I'm denying this request as well.

I am ordering, however, that Dr. Waldspurger be put up for a deposition of up to three-and-a-half hours which is what VMware has offered.

At this point -- well, first of all, I'm not persuaded three-and-a-half hours won't be enough time. But even if it is, here, again, the plaintiff had the opportunity to take up to ten depositions and choose only to take eight. I think that there was enough in the record that the plaintiff reasonably could have understood that Dr. Waldspurger might be someone worth their time taking a deposition of.

Further, as defendants have represented, if at the end of the three-and-a-half hours plaintiff thinks they can make a showing that they should get more opportunity to depose Dr. Waldspurger, the parties should meet and confer about that. And it's possible, if you don't work that out,

that some time up and until January 13th, when trial begins, that I might order some additional time.

But at this point, I'm not persuaded that this witness should be excluded. He is allegedly an inventor on the accused product, which is also a prior art reference. He has testimony, it seems like, it would be important for the jury to hear if either side wants to present him. He has been known to the plaintiff since the time of the complaint, and certainly the preliminary injunction hearing, given that he authored one of the prior art references.

So I see no basis to exclude him. I think a three-and-a-half-hour deposition will be enough. On the chance that I'm wrong and you can't work that out, then the plaintiff can come ask for more time.

On next, VMware's motion for leave to file a motion for summary judgment.

I'm going to call this granted in part and denied in part.

In my mind, there's three broad issues on which the defendant seeks to move for summary judgment:

The first one being the 300 plus million-dollar question, which turns, at least in part, on the each to each.

The second one being, as I understand it, whether there is enough evidence on infringement of a method

Honor.

THE COURT: Is there anything else?

MS. LEHMAN: No. Thank you.

THE COURT: All right. Thank you all. Have a good evening.

(Discovery conference hearing ends at 6:18 p.m.)

I hereby certify the foregoing is a true and accurate transcript from my stenographic notes in the proceeding.

/s/ Brian P. Gaffigan
Official Court Reporter
U.S. District Court

Exhibit 2

Redacted In Its Entirety

Exhibit 3

Redacted In Its Entirety

Exhibit 4

Redacted In Its Entirety

Exhibit 5

Redacted In Its Entirety

Exhibit 6

Redacted In Its Entirety

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CIRBA INC. (d/b/a DENSIFY) and CIRBA IP, INC., Plaintiffs, v. VMWARE, INC., Defendant.	Civil Action No. 1:19-cv-00742-LPS JURY TRIAL DEMANDED

PLAINTIFFS' REPLY TO THEIR MOTION IN LIMINE NO 3: CARL WALDSPURGER'S SECTION 102(g) DEFENSE

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Waldspurger's testimony is only applicable to the Section 102(g) defense. VMware's expert, Nieh, relied on a single document to corroborate that testimony. But that lone document was a wiki from 2008, which VMware did *not* identify as disclosing *VM-Host* affinities in its invalidity contentions. Ex.5. It was also after the filing of the '687 patent, and thus proved nothing. When directly asked, Waldspurger did not know of any "version control," or any way to tell what had been modified in 2008, making the allegation that it was from "2004" uncorroborated. *See* Ex. 6 at 49:4-51:19. There was simply *no* contemporaneous corroborating document from before the '687 patent filing. This is not an issue of sufficiency of the evidence, but of *absence* of evidence.[1]

Now, VMware tries to rehabilitate Waldspurger's testimony by insisting that there *is* an older version of the wiki from 2006. The problem is that VMware only produced this 2006 version on *Monday, December 30, 2019* — long *after* the close of discovery, *after* Densify wrote its motions in limine, *after* expert reports, and even *after* the Waldspurger deposition. Ex. 7. Densify respectfully submits the Court should exclude this new document from consideration in light of its untimely production and the prejudice to Densify, which now has been precluded from discovery on it, and given the highly suspicious circumstances. Moreover, since Nieh did not rely on this 2006 wiki (which had been withheld from discovery) to corroborate his conversations with Waldspurger, those conversations remain uncorroborated and must be excluded.

Moreover, the late-produced 2006 wiki does not even prove facts necessary for the Section 102(g) defense. "A conception must encompass all limitations of the claimed invention." *Singh v. Brake*, 317 F.3d 1334, 1340 (Fed. Cir. 2003). Here, the 2006 wiki does not disclose each and every limitation of claim 3 or 7 (VMware's invalidity contentions identified it as disclosing *VM-VM*, not *VM-Host*), nor does VMware (or Nieh) even attempt to meet its burden of showing that it does.

[1] The conception date is "a question of law," not a jury question. *Sprint Commc'ns Co. L.P. v. Comcast IP Holdings, LLC,* 2015 WL 452289, at *3 (D. Del. Jan. 30, 2015).

Date: January 2, 2020

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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CIRBA INC. (d/b/a DENSIFY) and CIRBA IP, INC., Plaintiffs, v. VMWARE, INC., Defendant.	Civil Action No. 1:19-cv-00742-LPS

DECLARATION OF CHRISTINE LEHMAN IN SUPPORT OF PLAINTIFFS' MOTION IN LIMINE #3: CARL WALDSPURGER'S §102(G) DEFENSE

I, Christine E. Lehman hereby declare as follows:

1. I am an attorney with Reichman Jorgensen LLP, counsel for Plaintiff Cirba Inc. (d/b/a Densify) and Cirba IP, Inc. ("Densify") in this matter. I am admitted in the State of New York and the District of Columbia and I have been admitted to appear in this case *pro hac vice*. I have personal knowledge of the matter set forth herein.
2. This declaration is submitted in support of Plaintiffs' Motion in Limine #3: Carl Waldspurger's § 102(g) defense.
3. Exhibit 5 is a true and correct copy of the excerpted Exhibit A-1 to Defendant VMware's Final Invalidity Contentions, served on November 19, 2019.
4. Exhibit 6 is a true and correct copy of the excerpted transcript of the deposition of Carl Waldspurger, Ph.D. on December 20, 2019.
5. Exhibit 7 is a true and correct copy of an email received from VMware at 4:59pm (EST) on December 30, 2019, producing the document bearing the Bates stamp VMW01826744.

Dated: January 2, 2020

Respectfully submitted

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Exhibit 5

Redacted In Its Entirety

Exhibit 6

Redacted In Its Entirety

Exhibit 7

Wesley L. White

From: Meier, Chris <cmeier@mofo.com>
Sent: Monday, December 30, 2019 4:59 PM
To: Ariel C. Green; Christine E. Lehman; Courtland L. Reichman; Gary Toman; Jaime F. Cardenas-Navia; Jennifer Estremera; Justin Myers; Joachim B. Steinberg; kdorsney@morrisjames.com; Kate Falkenstien; Khue V. Hoang; Michael G. Flanigan; Peter Ayers; RJ_Densify; Shawna L. Ballard; Sarah O. Jorgensen; Wesley L. White
Cc: agaza@ycst.com; mmeehan@ycst.com; mofo_vmware_cirba@mofo.com; rvrana@ycst.com; swilson@ycst.com
Subject: Cirba Inc. et al v. VMware, Inc., Case 1:19-cv-00742-LPS (D. Del.) - VMware production (VMW01826744-VMW01826768)

[EXTERNAL]

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Regards,

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Exhibit 11D

VMWARE, INC'S MOTION IN LIMINE NO. 1

TO EXCLUDE EVIDENCE OR ARGUMENT OF IRRELEVANT AND PREJUDICIAL REVENUE OR PROFITS INFORMATION

DEFENDANT'S OPENING MOTION

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CIRBA INC. (d/b/a DENSIFY) and CIRBA IP, INC.,

Plaintiffs,

v.

VMWARE, INC.,

Defendant.

C.A. No. 19-742-LPS

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VMWARE, INC'S MOTION IN LIMINE NO. 1 TO EXCLUDE EVIDENCE OR ARGUMENT OF IRRELEVANT AND PREJUDICIAL REVENUE OR PROFITS INFORMATION

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Cirba intends to introduce irrelevant and prejudicial evidence related to Cirba's purported lost profits and VMware's total revenue or profits for the accused products. Such evidence should be excluded under at least Federal Rule of Evidence 403.

Cirba seeks [redacted] in patent infringement damages, which its damages expert, Mr. Bergman, has stated is "***solely*** based on [a] reasonable royalty analysis," because he is "unable to quantify Densify's lost profits." (Ex. 1 ¶ 224 (emphasis added).) Cirba nonetheless asserts it will present evidence of the profits that Cirba would have made but for VMware's alleged infringement. Such evidence—[redacted]—should be excluded. *See* Fed. R. Evid. 402, 403; *Rodime PLC v. Seagate Tech., Inc.*, 174 F.3d 1294, 1307-08 (Fed. Cir. 1999) (affirming exclusion of "consequential damages" above a royalty where plaintiff attempted to "bootstrap evidence of its lost profits back into the case"). To allow such evidence when Cirba claims it cannot satisfy the legal requirements for seeking lost profits will confuse or unfairly inflame jurors. Fed. R. Evid. 403.

The risk of confusion and prejudice is particularly acute here as Cirba's expert claims he could not determine "which [redacted] or which customers VMware gained as a direct result of VMware's infringement." (Ex. 1 ¶ 224.) Allowing Cirba to present evidence of lost sales or profits, without the analysis necessary to support lost profits damages, would invite jury confusion and error.

Cirba also should not be permitted to present evidence or argument of VMware's total revenues or profits for the accused products (or VMware's total revenues and profits for the company as a whole). Cirba claims that VMware received revenues of [redacted] from the sale of accused products. (*Id.* ¶¶ 384, 390.) This figure or equivalent figures about profits serve

no purpose other than to skew the jury's views upward about the proper amount of damages.

The accused products, DRS and vROps, include significant non-accused functionality. DRS is only sold as part of the Enterprise, Enterprise plus, and Platinum editions of vSphere. (*Id.* ¶ 233; Ex. 2 at VMW01806628; Ex. 3 at VMW01806719.) vSphere, in turn, is bundled with even larger product suites. (Ex. 4 at VMW01806637; Ex. 5 at VMW01806641; Ex. 6 at VMW01806213; Ex. 7 at VMW01806436.) vROps is sold alone or in larger suites. (*Id.*; Ex. 8 at VMW01806577; Ex. 9; Ex. 10 at VMW01806582.) Only by summing all revenues for all these product suites does Cirba calculate total sales of over [redacted].[1] Cirba does not use that enormous number to calculate its royalty damages. For that purpose, Cirba's expert uses a per unit reasonable royalty and VMware's unit sales. (*See, e.g.*, Ex. 1 ¶¶ 400-411.) Thus, the only reason why Cirba would mention total revenues (or profits) is to bias the jury by making Cirba's request for an enormous sum [redacted]) seem palatable.

The Court should exclude this total revenues figure. The Federal Circuit has made clear that disclosing to the jury large revenue or profit figures untied to the claimed inventions is highly prejudicial, even with a limiting instruction. In *Uniloc USA, Inc. v. Microsoft Corp.*, for example, the Federal Circuit affirmed the grant of a new trial on damages where Uniloc had "tainted" the jury's damages award by introducing the defendant's total revenues. 632 F.3d 1292, 1320 (Fed. Cir. 2011) (total revenue "cannot help but skew the damages horizon for the jury, regardless of the contribution of the patented component to this revenue."); *see also VirnetX, Inc. v. Cisco Sys. Inc.*, 767 F. 3d 1308, 1327 (Fed. Cir. 2014) (revenue attributable to unpatented features improperly skews the jury's damages horizon); *LaserDynamics, Inc. v.*

[1] Cirba has identified so many products and bundles that its damages expert created a table with 21 entries that he states is "not meant to be exhaustive." (Ex. 1 ¶ 114.)

Quanta Computer, Inc., 694 F.3d 51, 68 (Fed. Cir. 2012) (such evidence "only serve[s] to make a patentee's proffered damages amount appear modest by comparison, and to artificially inflate the jury's damages calculation beyond that which is 'adequate to compensate for the infringement.'" (citation omitted)).

Courts in this and other districts have cautioned against introducing total revenues or profits for this same reason. *See, e.g.*, *Sonos, Inc. v. D & M Holdings Inc.*, 297 F. Supp. 3d 501, 514-15 (D. Del. 2017) ("[T]he entire market value rule [('EMVR')] ordinarily prohibits the presentation of evidence to a jury that uses the entire market value of a multi-component product."); *Fujifilm Corp. v. Motorola Mobility LLC*, No. 12-cv-03587-WHO, 2015 WL 1737951, at *14 (N.D. Cal. Apr. 8, 2015) (excluding testimony concerning total revenue where expert said that he did not reach reasonable royalty figure using EMVR).

Mr. Bergman concedes his "reasonable royalty calculations are not based on a showing that the 'entire market value' of the Accused Products is attributable to the patents-in-suit." (Ex. 1 ¶ 181.) Rather, he claims to have apportioned and based his primary damages calculations on unit sales, not revenues. (*See id.* ¶¶ 412, 428, 442.) A recitation of the accused products' total revenues by witnesses or by Cirba's expert would be improper, unduly prejudicial, and irrelevant, especially as those revenues reflect unaccused functionality and products simply bundled with DRS and vROps.

In sum, total revenues and profits—for both parties—are irrelevant and run a significant risk of biasing or confusing the jury. They should be excluded under Rule 403.

Dated: December 23, 2019

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EXHIBIT 1

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EXHIBIT 2

VMware vSphere with Operations Management and VMware vSphere

Licensing, Pricing and Packaging

WHITE PAPER

vmware

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Executive Summary

This guide provides an overview of the licensing, pricing, and packaging for VMware vSphere® with Operations Management™ 6 and VMware vSphere® 6. The key topics discussed in this guide include:

- VMware vSphere with Operations Management Offering Overview
- Licensing Overview – Licensing per edition and license management
- Packaging Overview – Packaging options for editions (including VMware vCenter Server™) and kits
- Version Upgrade Entitlements for Existing Customers
- Paid Edition Upgrades from VMware vSphere 6 and VMware vSphere with Operations Management 6

VMware vSphere with Operations Management Overview

vSphere with Operations Management offers the most trusted virtualization platform with critical operational enhancements in performance monitoring and capacity management. It is designed for businesses of all sizes to run applications at high service levels and maximize hardware savings through higher capacity utilization and consolidation ratios. IT can gain visibility into virtual environments, proactively identify and remediate emerging performance issues, and optimize resource utilization through a unified console. On average, customers see tremendous benefits beyond using vSphere alone: 36 percent reduction in application downtime, 30 percent increase in hardware savings, and 26 percent decrease in time spent on troubleshooting issues[1].

For more information on the differences between vSphere with Operations Management and vSphere, please refer to the Packaging Overview section.

1. Source: Management Insight Technologies (2014), The Benefits of VMware's vCenter Operations Management Suite: Quantifying the Incremental Value of the vCenter Operations Management Suite for vSphere Customers.

Licensing Overview

VMware vSphere with Operations Management 6 Licensing: Per-Processor

VMware vSphere with Operations Management 6 is licensed on a per-processor basis. Each physical processor (CPU) in a server needs to have exactly one vSphere with Operations Management processor license key assigned to be able to run vSphere with Operations Management. vSphere with Operations Management license keys can be purchased, deployed and managed in the same way they were with vSphere 5.x and vSphere with Operations Management 5.x.

No Limits on Physical Resources

There are no restrictions on physical cores or physical RAM with vSphere with Operations Management 6.

No Limits on Number of Virtual Machines

There are no restrictions on the number of virtual machines that can run on each properly licensed vSphere with Operations Management 6 processor.

Two Components Under a Single License

VMware vSphere with Operations Management 6 combines two components (vSphere and VMware vRealize™ Operations™ Standard) into a single product with a single license. All virtual machines running on a properly licensed VMware vSphere with Operations Management processor can use all components. vSphere with Operations Management is not decomposable: the two components of a vSphere with Operations Management edition behave as a single entitlement. Upgrades occur on an edition basis or through the vRealize Operations Insight™ add-on only – vSphere and VMware vRealize Operations™ components cannot be upgraded independently.

VMware vSphere 6 Licensing: Per-Processor

vSphere 6 is licensed on a per-processor basis. Each physical processor (CPU) in a server needs to have at least one vSphere 6 processor license key assigned to be able to run vSphere. vSphere 6 license keys can be purchased, deployed and managed in the same way they were with vSphere 4.x and vSphere 5.x.

No Limits on Physical Resources
There are no restrictions on physical cores or physical RAM with vSphere 6.

No Limits on Number of Virtual Machines
There are no restrictions on the number of virtual machines that can run on each properly licensed vSphere 6 processor.

VMware vSphere 6 for Virtual Desktop Deployments
VMware vSphere Desktop is specifically designed for licensing vSphere when used to run virtual desktops. It can only be used as a virtualization platform for Virtual Desktop Infrastructure (VDI) deployments with either VMware Horizon® View™ or third-party connection brokers. For more details, see the Packaging Overview section.

License Management

vSphere 6 and vSphere with Operations Management 6 licenses are simple license keys (25-character alphanumeric strings) that contain encrypted information about the vSphere (or vSphere with Operations Management) edition or kit purchased and the processor quantity. These license keys do not contain any server-specific information and are not tied to a specific piece of hardware. This means that the same license key can be assigned to multiple vSphere hosts, as long as the sum of physical processors on those hosts does not exceed the encoded license quantity in the license key.

Centralized Licensing with No Single Point of Failure
VMware vCenter Server is the recommended interface for license assignment to vSphere and vSphere with Operations Management hosts. When a license key is assigned by vCenter Server, it is copied to the host and saved in a persistent format. If the host becomes disconnected from vCenter Server, the license key remains active on the host indefinitely, even after a host reboot. Only a deliberate licensing operation by the user can remove or replace a host license key.

Decentralized Licensing Option

VMware recommends that customers assign all vSphere and vSphere with Operations Management licenses centrally through VMware vCenter Server.

However, vSphere customers have the option to assign their license keys directly to individual hosts. There is no difference between directly and centrally assigned license keys. When a vSphere host is added to the vCenter Server inventory, any license key already on the host will become available for management, reporting and assignment in vCenter Server, just like any license key added directly via vCenter Server. For more information on vSphere licensing, visit http://www.vmware.com/support/licensing.html.

Example: Licensing New Hosts with vSphere with Operations Management 6

A user has two 2-CPU (each with 6 cores) hosts with 128GB of physical RAM each that they wish to license with vSphere with Operations Management 6 Enterprise edition. Each physical CPU requires a license, so four vSphere with Operations Management 6 Enterprise licenses are required. No additional licenses will be needed regardless of the number of virtual machines, amount of virtual memory (vRAM) or physical cores or RAM.

Packaging Overview

VMware offers several packaging options that are designed for customers to meet their specific requirements for scalability, size of environment, and use cases.

vSphere with Operations Management Editions

Customers can choose from three editions of vSphere with Operations Management (see Figure 1). A Support and Subscription (SnS) contract is required for every edition purchase.

vSphere with Operations Management Standard Edition provides an entry-level solution for basic server consolidation to slash hardware costs while accelerating application deployment. Best in class management capabilities allow IT to gain visibility into virtual environments, proactively identify and remediate emerging performance issues, and optimize resource utilization through a unified console.

vSphere with Operations Management Enterprise Edition is a robust solution that customers can use to optimize IT assets, ensure cost-effective business continuity and streamline IT operations through automation. Best in class management capabilities allow IT to gain visibility into virtual environments, proactively identify and remediate emerging performance issues, and optimize resource utilization through a unified console.

	VSPHERE WITH OPERATIONS MANAGEMENT			VSPHERE		
	Standard	Enterprise	Enterprise Plus	Standard	Enterprise	Enterprise Plus
Features						
vSphere Monitoring*	•	•	•			
Capacity Optimization*	•	•	•			
Operations Visibility*	•	•	•			
Hypervisor	•	•	•	•	•	•
vMotion®, Storage vMotion and X-Switch vMotion	•	•	•	•	•	•
High Availability and Fault Tolerance	2 vCPU	2 vCPU	4 vCPU	2 vCPU	2 vCPU	4 vCPU
Data Protection™ and Replication†	•	•	•	•	•	•
vShield Endpoint™	•	•	•	•	•	•
Virtual Volumes and Storage-Policy Based Management	•	•	•	•	•	•
APIs for Storage Awareness	•	•	•	•	•	•
Content Library	•	•	• (+Template Deployment)	•	•	• (+Template Deployment)
APIs for Array Integration, Multipathing		•	•		•	•
Distributed Resource Scheduler™ and Distributed Power Management™		•	•		•	•
Big Data Extensions		•	•		•	•
Distributed Switch™			•			•
Storage DRS™			•			•
I/O Controls (Network and Storage) and SR-IOV			•			•
Host Profiles and Auto Deploy			•			•
Flash Read Cache™			•			•
Cross-vCenter and Long Distance VMotion			•			•
vGPU			•			•

Figure 1. vSphere with Operations Management 6 and vSphere 6 Editions
* vSphere Monitoring, Capacity Optimization, and Operations Visibility are found also in VMware vRealize™ Operations™ Standard
† Advanced backup features (app-aware agents, replication, integration with Data Domain, etc.) are now available in vSphere Data Protection™

vSphere with Operations Management Enterprise Plus Edition offers the full range of vSphere features for transforming data centers into dramatically simplified virtualized infrastructures, for running today's applications with the next generation of flexible, reliable IT services. Best in class management capabilities allow IT to gain visibility into virtual environments, proactively identify and remediate emerging performance issues, and optimize resource utilization through a unified console.

For information on local currency prices for vSphere with Operations Management Editions visit: http://www.vmware.com/products/vsphere-operations-management/pricing.html

vSphere with Operations Management add-on:
VMware vRealize Operations Insight™ is a unified management solution for performance management, capacity optimization, and real-time log analytics. vRealize Operations Insight is sold as a bundled solution that includes vRealize Operations Advanced and vRealize Log Insight™ and is available as an add-on to vSphere with Operations Management Standard, Enterprise, and Enterprise Plus.

vSphere Editions

Customers can choose from three editions of vSphere (see Figure 2). A Support and Subscription (SnS) contract is required for every edition purchase.

vSphere Standard Edition provides an entry-level solution for basic server consolidation to slash hardware costs while accelerating application deployment.

vSphere Enterprise Edition is a robust solution that customers can use to optimize IT assets, ensure cost-effective business continuity and streamline IT operations through automation.

vSphere Enterprise Plus Edition offers the full range of vSphere features for transforming data centers into dramatically simplified cloud infrastructures, for running today's applications with the next generation of flexible, reliable IT services.

For information on local currency prices for vSphere Editions, visit: http://www.vmware.com/products/datacenter-virtualization/vsphere/pricing.html

VMware Integrated OpenStack

vSphere Enterprise Plus and vSphere with Operations Management Enterprise Plus customers can use VMware Integrated OpenStack free of charge. Optional support for VMware Integrated OpenStack is sold separately on a per CPU basis. For more information, visit http://www.vmware.com/products/openstack.html.

VMware vSphere Hypervisor

VMware vSphere Hypervisor is a free product that provides a simple and easy way to get started with virtualization at no cost. vSphere Hypervisor provides only basic virtualization capabilities, allowing customers to virtualize servers and run applications in virtual machines in a matter of minutes. vSphere Hypervisor cannot connect to vCenter Server and therefore cannot be centrally managed. Users can remotely manage individual vSphere Hypervisor hosts using the vSphere Client. There are no restrictions on the number of cores per physical CPU, on the number of physical CPUs per host and on the amount of RAM per server/ host. The maximum vCPUs per virtual machine is eight.

VMware vSphere Desktop

vSphere Desktop Edition is a vSphere Edition designed for licensing vSphere in VDI deployments. vSphere Desktop provides all functionalities of vSphere Enterprise Plus Edition™. It can only be used for VDI deployment and can be leveraged with both VMware Horizon View and other third-party VDI connection brokers.

vSphere Desktop edition is licensed based on the total number of powered-on desktop virtual machines and can be purchased either stand-alone in a pack size of 100 desktop virtual machines or included with the Horizon View bundle. For detailed information on pricing visit: http://www.vmware.com/products/view/howtobuy.html

vSphere with Operations Management Acceleration Kits

vSphere with Operations Management Acceleration Kits are all- in-one convenience bundles that provide a simple way for customers to purchase all the necessary components to set up a new VMware environment (see Figure 2). Each kit consists of six processor licenses for vSphere with Operations Management, and a license for one instance of vCenter Server Standard.

Unlike the Essentials Kits and VMware vSphere 4.x Acceleration Kits that function as single entity, vSphere with Operations Management Acceleration Kits decompose into their individual kit components after purchase. This allows customers to upgrade and renew SnS for each individual component on its own schedule. Visit http://www.vmware.com/vmwarestore or contact your local reseller for more specific information on the latest available Acceleration Kit offerings.

VMware vSphere Essentials Kits

VMware vSphere Essentials Kits are all-in-one solutions for small environments (up to three hosts with two CPUs each) available in two editions— Essentials and Essentials Plus (see Figure 2). Each kit consists of six processor licenses for vSphere, and a license for one instance of vCenter Server Essentials. Scalability limits for the Essentials Kits are product-enforced and cannot be extended other than by upgrading the whole kit to an Acceleration Kit (see Paid Edition Upgrades section below). vSphere Essentials and Essentials Plus Kits are self-contained solutions and may not be decoupled, or combined with other vSphere editions.

vSphere Essentials Kit is an all-in-one solution ideal for small offices. It enables consolidation and management of applications to reduce hardware and operating costs—all with a low upfront investment. Essentials must be purchased along with a one-year subscription to software patches and updates. Support is optional and available on a per-incident basis.

vSphere Essentials Plus Kit adds features such as vSphere vMotion®, vSphere HA, and vSphere Data Protection™ to vSphere Essentials to enable always-on IT for the small environment. Essentials Plus is ideal for small businesses that, in addition to hardware and operation cost savings, are looking for maximization of application availability and business continuity with a low upfront investment. SnS for Essentials Plus is sold separately. A minimum of one year of SnS is required.

	VSPHERE ESSENTIALS KITS		VSPHERE WITH OPERATIONS MANAGEMENT ACCELERATION KITS		
	Essentials	Essentials Plus	Standard	Enterprise	Enterprise Plus
Includes					
vSphere	6 CPUs	6 CPUs	6 CPUs	6 CPUs	6 CPUs
vCenter Server	1 instance vCenter Server Essentials	1 instance vCenter Server Essentials	1 instance vCenter Server Standard	1 instance vCenter Server Standard	1 instance vCenter Server Standard
Features					
vSphere Monitoring*			•	•	•
Capacity Optimization*			•	•	•
Operations Visibility*			•	•	•
Hypervisor	•	•	•	•	•
vMotion® and X-Switch vMotion		•	•	•	•
High Availability		•	•	•	•
Data Protection™ and Replication†		•	•	•	•
vShield Endpoint™		•	•	•	•
Fault Tolerance			2 vCPU	2 vCPU	4 vCPU
Storage vMotion			•	•	•
Virtual Volumes and Storage-Policy Based Management			•	•	•
APIs for Storage Awareness			•	•	•
Content Library			•	•	• (+Template Deployment)
APIs for Array Integration, Multipathing				•	•
Distributed Resource Scheduler™ and Distributed Power Management™				•	•
Big Data Extensions				•	•
Distributed Switch™					•
Storage DRS™					•
I/O Controls (Network and Storage) and SR-IOV					•
Host Profiles and Auto Deploy					•
Flash Read Cache™					•
Cross-vCenter and Long Distance vMotion					•
vGPU					•

Figure 2. vSphere 6 Essentials Kits and vSphere with Operations Management 6 Acceleration Kits
*vSphere Monitoring, Capacity Optimization, and Operations Visibility are found also in VMware vRealize™ Operations™ Standard
† Advanced backup features (app-aware agents, replication, integration with Data Domain, etc.) are now available in vSphere Data Protection™

VMware vSphere Remote Office Branch Office

vSphere Remote Office Branch Office Standard and vSphere Remote Office Branch Office Advanced are new vSphere editions designed specifically for IT infrastructure located in remote, distributed sites and deliver improved service-levels, standardization, availability and compliance. These editions include 25 Virtual Machine (VM) licenses of the new vSphere Remote Office Branch Office Standard or vSphere Remote Office Branch Office Advanced. The flexible per VM pricing model also allows customers to deploy only the number of workloads they require in each remote site. Customers can deploy a maximum of 25 VMs per Remote Office Branch Office site. Server hosts can be managed by vCenter Server Foundation or vCenter Server Standard purchased separately.

vSphere Remote Office Branch Office Standard enables highly available IT infrastructure in the remote sites. This edition includes vMotion, High Availability, Data Protection and Replication, Hot Add, vShield Endpoint, Fault Tolerance, Storage vMotion, Virtual Volumes and Storage-Policy Based Management.

vSphere Remote Office Branch Office Advanced enables rapid provisioning of servers, minimization of host configuration drift and enhanced visibility into regulatory compliance, across multiple sites. This edition includes vMotion, High Availability, Data Protection and Replication, Hot Add, vShield Endpoint, Fault Tolerance, Storage vMotion, Virtual Volumes, Storage-Policy Based Management, Host Profiles, Auto-deploy and Distributed Switch.

For information on local currency prices for vSphere Editions and Kits visit: http://www.vmware.com/products/datacenter-virtualization/vsphere/pricing.html.

vCenter Server Editions

vCenter Server provides unified management for vSphere environments and is a required component of a complete vSphere deployment. One instance of vCenter Server is required to centrally manage virtual machines and their hosts and to enable all vSphere features.

vCenter Server is available in the following packages:

- vCenter Server Essentials – Integrated management for vSphere Essentials Kits
- vCenter Server Standard – Highly scalable management with rapid provisioning, monitoring, orchestration and control of all virtual machines in a vSphere environment

vCENTER SERVER		
	Essentials	**Standard**
Number of hosts	Up to 3	Unlimited
vSphere licensed managed	vSphere Essentials and vSphere Essentials Plus	vSphere Standard, vSphere Enterprise, vSphere Enterprise Plus, vSphere with Operations Management, and vCloud Suite

Figure 3. vCenter Server Essentials and vCenter Server Standard

For information on local currency prices for vCenter Server Editions visit: http://www.vmware.com/products/datacenter-virtualization/vsphere/pricing.html.

Version Upgrade Entitlements for Existing Customers

vSphere customers with an active SnS contract are entitled to version upgrade to vSphere 6.0 at no extra charge. All version upgrades to vSphere 6.0 require acceptance of the new end-user licensing agreement (EULA) and vSphere 6 licensing model (see Figure 4).

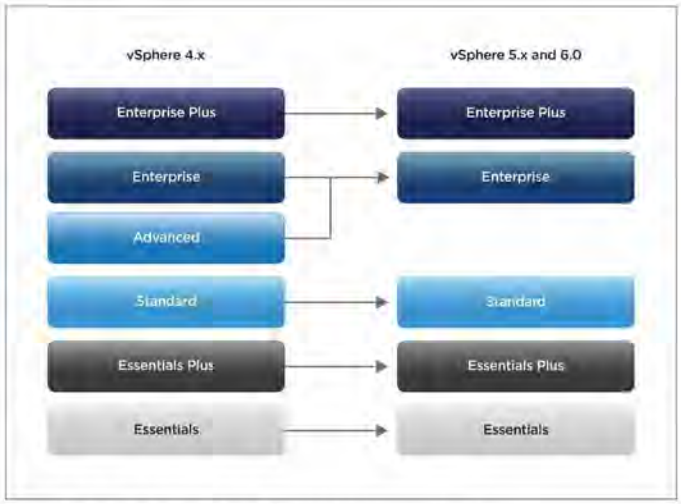

Figure 4. vSphere 4.x to vSphere 5.x and 6.0 Entitlement Paths

Visit the vSphere Upgrade Center for more information and to determine the appropriate upgrade path for your organization: http://www.vmware.com/products/vsphere/upgrade-center/overview.html.

Version downgrades for vSphere and vSphere with Operations Management

- vSphere can version downgrade.
- vSphere with Operations Management cannot version downgrade the vSphere component to 4.x or prior. Customers can choose to run any vSphere 5.x or 6.0 version (downgrade via My VMware portal) and any vRealize™ Operations™ Standard 5.6-6.0 version (via static key available in product download group).
- VMware vSphere Remote Office Branch Office™ can version downgrade from 6.0 to 5.5U2. vCenter Server needs to be at the same version or above than the ESX host. For example, if the ESX version is 5.5U2, vCenter Server needs to be 5.5U2 or above.

Reinstatement Options for Customers with Inactive SnS Contracts

Customers who have an expired SnS must pay reinstatement fees to purchase supported upgrades. Reinstatement fees are based on the following criteria:

- The applicable SnS fees for the current contract term
- Fees that would have been paid for the period of time that the customer's SnS contract was not active
- A 20 percent fee on the sum of the fees in the preceding two criteria

Paid Edition Upgrades

Customers may purchase an upgrade to a higher vSphere edition, to a vSphere with Operations Management edition, or to a VMware vCloud Suite® edition (see Figure 5). For example, vSphere Enterprise Plus customers may upgrade to vSphere with Operations Management Enterprise Plus or to any vCloud Suite edition. When customers upgrade supported licenses to a higher edition, the original license key is deactivated and a new license key is issued for the upgraded edition. A SnS contract for the edition upgraded to must be purchased at time of upgrade purchase. This new SnS contract will be extended by the original SnS contract value remaining on the edition from which the customer upgraded. SnS contracts as short as two months are available for customers with a significant value remaining in their existing contract. This process ensures that only a single license key exists that has a single SnS contract with a single termination date.

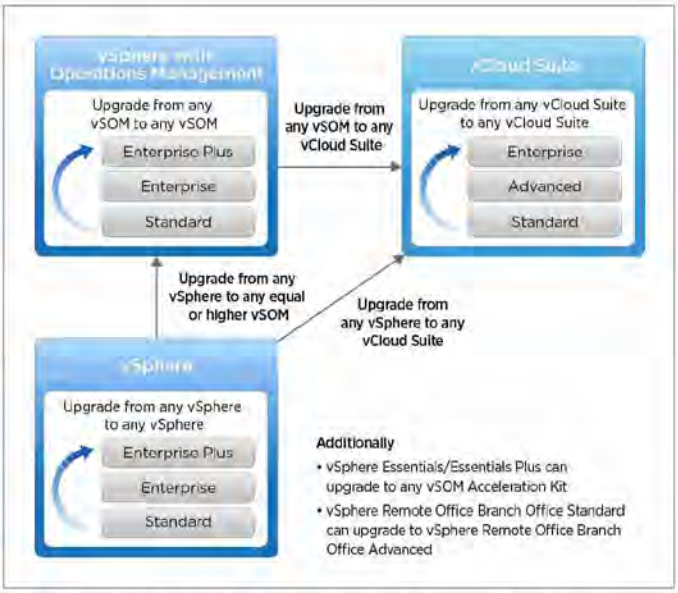

Figure 5. Upgrade Paths available between vSphere, vSphere with Operations Management and vCloud Suite

Since vSphere with Operations Management Acceleration Kits decompose into individual kit components after purchase, customers upgrade using the same upgrade paths as vSphere with Operations Management Edition customers. There are no Acceleration Kit to Acceleration Kit upgrades.

For information on local currency prices for vSphere Editions and Kits visit: www.vmware.com/products/vsphere/pricing.html

FAQ

Q. How is vSphere with Operations Management 6 licensed?

A. vSphere with Operations Management is licensed on a per-processor basis without limitation on the number of virtual machines, cores or amount of physical RAM.

Q. How many license keys will a customer get when they purchase vSphere with Operations Management?

A. vSphere with Operations Management will show up in the customer's license portal as a unique entitlement. This entitlement will generate one license key that the customer will activate in vCenter Server.

Q. Are there VMware Acceleration Kits for vSphere with Operations Management?

A. Yes, there are three Acceleration Kits associated with the three editions of vSphere with Operations Management. Each kit consists of six processor licenses for vSphere with Operations Management, and a license for one instance of vCenter Server Standard.

Q. Can I purchase an upgrade from vSphere with Operations Management to VMware vRealize™ Operations™ Advanced and Enterprise?

A. All vSphere with Operations Management editions include VMware vRealize Operations Standard. Customers can add VMware vRealize Operations Advanced to all editions of VMware vSphere with Operations Management by purchasing the vRealize Operations Insight add-on, a bundled solution that includes vRealize Operations Advanced and vRealize Log Insight. Customers who want VMware vRealize Operations Enterprise have two options: (1) purchase a paid upgrade to vCloud Suite Enterprise or (2) purchase standalone VMware vRealize Operations Enterprise on a per-VM basis.

Q. Is it acceptable to have both vSphere hosts and vSphere with Operations Management hosts managed under a single vCenter Server?

A. VMware recommends managing only a single vSphere with Operations Management edition under a vCenter Server instance to simplify license management and compliance. If you must run multiple vSphere with Operations Management editions (or both vSphere with Operations Management and vSphere/vCloud Suite) under a single vCenter Server instance (mixed environment), you can still be compliant. To be compliant in a mixed environment, you must ensure that all virtual machines are properly licensed for the functionality being used (e.g., capacity management provided by VMware vRealize Operations Standard). A virtual machine can be properly licensed either through a vSphere with Operations Management license (on a per-processor basis) or a standalone product license (on a per-virtual machine basis).

Q. Is it acceptable to have both VMware vRealize Operations on a per-VM basis and vSphere with Operations Management on a per-CPU basis? (e.g. customer adds vSphere with Operations Management into existing VMware vRealize Operations environment)

A. Yes, this is acceptable as long as license compliance is maintained.

Q. Does the vSphere 6 licensing model—per-processor without limitation on the number of virtual machines, cores or amount of physical RAM—apply to vSphere 5.x and vSphere 6.0?

A. Yes. There are no restrictions on the number of cores or amount of physical RAM vSphere 5.x and 6.0 customers. This also applies to vSphere with Operations Management customers.

Q. Does the vSphere 6 licensing model apply to existing licenses of vSphere 4.x or prior?

A. No. The new vSphere licensing model applies only to new purchases of vSphere licenses or to existing licenses of vSphere 4.x or older that are version upgraded to vSphere 5.x or vSphere 6.0.

Q. When version upgrading to existing licenses for vSphere 4.x or older to vSphere 5.x or vSphere 6.0, may I maintain the vSphere 4.x licensing model?

A. No. In order to complete the upgrade, the new vSphere 5.x or vSphere 6.0 EULA must be accepted.

Q. Can I apply the vRealize Operations functionality included with vSphere with Operations Management to virtual machines running on hosts that are not licensed with vSphere with Operations Management?

A. No, the vRealize Operations functionality included with vSphere with Operations Management can only be used for virtual machines running on hosts that are properly licensed with vSphere with Operations Management. Virtual Machines running on other hosts would need to be licensed separately.

Q. Which customers are eligible for vSphere Desktop?

A. vSphere Desktop is available to all commercial, academic, and government customers who want to purchase new licenses of vSphere for only host desktop virtualization. Customers who purchase the Horizon View bundles get vSphere Desktop.

Q. I am currently using vSphere Enterprise Plus to deploy a third-party desktop virtualization solution. Can I continue to do so?

A. Yes. Customers currently using vSphere as backend for a third-party VDI deployment can continue to do so.

Q. Can vSphere Desktop be used to run third-party desktop management and infrastructure tools or third-party server products for desktops?

A. As per the vSphere 6 EULA, vSphere Desktop standalone can be used for hosting virtual desktop machines or desktop management and monitoring tools that are used for VDI deployments only.

How to Buy

For information on local currency prices for vSphere and vSphere with Operations Management Editions and Kits visit: http://www.vmware.com/products/vsphere-operations- management/pricing.html

To purchase vSphere or vSphere with Operations Management, use the online VMware Partner Locator to find an authorized reseller in your area: http://partnerlocator.vmware.com/

You can also visit the online VMware Store to determine which kit or edition of vSphere with Operations Management or vSphere is right for your organization: http://www.vmware.com/vmwarestore/

Learn More

For information or to purchase VMware products, call 877-4-VMWARE (outside of North America dial 650-427-5000), visit http://www.vmware.com/products, or search online for an authorized reseller. For detailed specifications and systems requirements, refer to the VMware vSphere documentation.

VMware, Inc. 3401 Hillview Avenue Palo Alto CA 94304 USA Tel 877-486-9273 Fax 650-427-5001 www.vmware.com
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EXHIBIT 3

WHITE PAPER – OCT 2018

VMWARE vSPHERE COMPUTE VIRTUALIZATION

Licensing, Pricing, and Packaging

vmware

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Executive Summary

This guide provides an overview of the licensing, pricing, and packaging for VMware vSphere®. The key topics discussed in this guide include:

- VMware vSphere Overview
- Licensing Overview – Licensing metric and management
- Packaging Overview – Packaging options for editions (including VMware vCenter Server®) and kits
- Version Upgrade Entitlements for Existing Customers
- Paid Edition Upgrades from VMware vSphere 6.7

VMware vSphere Overview

vSphere is the leading server virtualization platform with the best foundation for your applications, your cloud and your business.

vSphere helps you get the best performance, availability, and efficiency from your infrastructure and applications. It's the ideal foundation for any cloud environment.

vSphere Platinum offers the most secure compute platform for all workloads by combining the industry-leading capabilities of vSphere with VMware AppDefense™. It delivers a purpose-built solution that secures infrastructure and applications by leveraging the hypervisor, and the power of machine learning, in a way that is built-in, operationally simple, and with minimal overhead or impact on performance.

Licensing Overview

VMware vSphere 6.7 Licensing: Per-Processor

vSphere 6.7 is licensed on a per-processor basis. Each physical processor (CPU) in a server needs to have at least one processor license key assigned to be able to run vSphere.

No Limits on Physical Resources

There are no restrictions on physical cores or physical RAM with vSphere 6.7.

No Limits on Number of Virtual Machines

There are no restrictions on the number of virtual machines that can run on each properly licensed vSphere 6.7 processor.

VMware vSphere for Virtual Desktop Deployments

VMware vSphere Desktop is specifically designed for licensing vSphere when used to run virtual desktops. It can only be used as a virtualization platform for Virtual Desktop Infrastructure (VDI) deployments with either VMware Horizon® View™ or third-party connection brokers. For more details, see the Packaging Overview section.

Two Components Under a Single License

VMware vSphere Platinum 6.7 combines two components—VMware vSphere for Platinum with AppDefense Plug-in and VMware AppDefense (SaaS) for Platinum—into a single product with a single license. The vSphere component of the bundle is deployed on-premises and is sold as a perpetual license with Support and Subscription, and the AppDefense component is a VMware hosted cloud service sold as subscription. vSphere Platinum is decomposable into its two components but customers cannot purchase these components a la carte. Upgrades occur on component level and through add-ons. All virtual machines running on a properly licensed VMware vSphere Platinum processor can use all components. A single license of vSphere Platinum cannot be used across multiple processors. For example, one license cannot be used for a component (e.g., vSphere for Platinum with AppDefense Plug-in) on one processor and another component (e.g., AppDefense (SaaS) for Platinum) on a different processor.

License Management

VMware vSphere 6.7 licenses are simple license keys (25-character alphanumeric strings) that contain encrypted information about the vSphere edition or kit purchased and the processor quantity. These license keys do not contain any server-specific information and are not tied to a specific piece of hardware. This means that the same license key can be assigned to multiple vSphere hosts, as long as the sum of physical processors on those hosts does not exceed the encoded license quantity in the license key.

Centralized Licensing with No Single Point of Failure

VMware vCenter Server is the recommended interface for license assignment to vSphere hosts. When a license key is assigned by vCenter Server, it is copied to the host and saved in a persistent format. If the host becomes disconnected from vCenter Server, the license key remains active on the host indefinitely, even after a host reboot. Only a deliberate licensing operation by the user can remove or replace a host license key.

Decentralized Licensing Option

VMware recommends that customers assign all vSphere licenses centrally through VMware vCenter Server.

However, vSphere customers have the option to assign their license keys directly to individual hosts. There is no difference between directly and centrally assigned license keys. When a vSphere host is added to the vCenter Server inventory, any license key already on the host will become available for management, reporting and assignment in vCenter Server, just like any license key added directly via vCenter Server. For more information on licensing, visit http://www.vmware.com/support/licensing.html.

Example: Licensing New Hosts with VMware vSphere Platinum 6.7

A user has two 2-CPU (each with six cores) hosts with 128GB of physical RAM each that they wish to license with vSphere Platinum edition. Each physical CPU requires a license, so four vSphere Platinum 6.7 licenses are required. No additional licenses will be needed regardless of the number of virtual machines, amount of virtual memory (vRAM) or physical cores or RAM. A license entitles a customer to a VMware vSphere for Platinum with AppDefense Plug-in perpetual license and a VMware AppDefense (SaaS) for Platinum subscription.

Packaging Overview

VMware offers several packaging options that are designed for customers to meet their specific requirements for scalability, size of environment, and use cases.

vSphere Editions

Customers can choose from three editions: vSphere Standard, vSphere Enterprise Plus and vSphere Platinum (see Figure 1). A Support and Subscription (SnS) contract is required for every edition purchase.

vSphere Standard Edition™ provides an entry-level solution for basic server consolidation to slash hardware costs while accelerating application deployment.

vSphere Enterprise Plus Edition™ offers the full range of vSphere features for transforming data centers into dramatically simplified cloud infrastructures, for running today's applications with the next generation of flexible, reliable IT services.

vSphere Platinum Edition enables you to secure applications, infrastructure, data, and access with the combined capabilities of core vSphere and VMware AppDefense. It offers enhanced visibility and protection with simple, light-weight and scalable security with no agents to manage, and minimal overhead with vSphere Platinum today.

For information on local currency prices for vSphere editions, visit: http://www.vmware.com/products/datacenter-virtualization/vsphere/pricing.html

	vSPHERE		
	Standard	Enterprise Plus	Platinum
Features			
Hypervisor	•	•	•
vMotion®, Storage vMotion® and X-Switch vMotion	•	•	•
High Availability and Fault Tolerance	2 vCPU	8 vCPU	8 vCPU
Data Protection and Replication[1]	•	•	•
Virtual Volumes™ and Storage-Policy Based Management	•	•	•
APIs for Storage Awareness	•	•	•
APIs for Array Integration, Multipathing	•	•	•
Content Library	•	•	•
vCenter® High Availability	(vCenter STD)	(vCenter STD)	(vCenter STD)
vCenter Backup and Restore	(vCenter STD)	(vCenter STD)	(vCenter STD)
vCenter Server Appliance™ Migration Tool	(vCenter STD)	(vCenter STD)	(vCenter STD)
Virtual Machine Encryption		•	•
Proactive HA		•	•
vSphere Integrated Containers™		•	•
Distributed Resource Scheduler™ and Distributed Power Management™		•	•

[1] Advanced backup features (app-aware agents, replication, integration with Data Domain, etc.) are now available in vSphere Data Protection™.

	vSPHERE		
	Standard	Enterprise Plus	Platinum
Big Data Extensions™		•	•
Distributed Switch™		•	•
Storage DRS™		•	•
I/O Controls (Network and Storage) and SR-IOV		•	•
Host Profiles and Auto Deploy™		•	•
Flash Read Cache™		•	•
Cross-vCenter and Long Distance vMotion		•	•
vGPU		•	•
Predictive DRS		•	•
AppDefense vCenter Server Plug-in			•
Automated discovery of Application Assets, Intent, and Communication			•
Contextual intelligence of Application State			•
Orchestrated or Automated Responses to Security Threats			•
Integration with third-party Security Operations tools			•

Figure 1. vSphere 6 Editions

VMware Integrated OpenStack

vSphere Enterprise Plus customers can use VMware Integrated OpenStack free of charge. Optional support for VMware Integrated OpenStack is sold separately on a per CPU basis. For more information, visit http://www.vmware.com/products/openstack.html.

VMware vSphere Hypervisor

VMware vSphere Hypervisor is a free product that provides a simple and easy way to get started with virtualization at no cost. vSphere Hypervisor provides only basic virtualization capabilities, allowing customers to virtualize servers and run applications in virtual machines in a matter of minutes. vSphere Hypervisor cannot connect to vCenter Server and therefore cannot be centrally managed. Users can remotely manage individual vSphere Hypervisor hosts using the vSphere Client. There are no restrictions on the number of cores per physical CPU, on the number of physical CPUs per host and on the amount of RAM per server/host. The maximum vCPUs per virtual machine is eight.

VMware vSphere Desktop

vSphere Desktop Edition is a vSphere Edition designed for licensing vSphere in VDI deployments. vSphere Desktop provides all functionalities of vSphere Enterprise Plus Edition. It can only be used for VDI deployment and can be leveraged with both VMware Horizon View and other third-party VDI connection brokers.

vSphere Desktop Edition is licensed based on the total number of powered-on desktop virtual machines and can be purchased either standalone in a pack size of 100 desktop virtual machines or included with the Horizon View bundle. For detailed information on pricing visit: http://www.vmware.com/products/view/howtobuy.html

VMware vSphere Acceleration Kits

vSphere Acceleration Kits are all-in-one convenience bundles that provide a simple way for customers to purchase all the necessary components to set up a new VMware environment (see Figure 2). Each kit consists of six processor licenses for vSphere and a license for one instance of vCenter Server Standard™.

Unlike the Essentials Kits and VMware vSphere 4.x Acceleration Kits that function as a single entity, vSphere Acceleration Kits decompose into their individual kit components after purchase. This allows customers to upgrade and renew SnS for each individual component on its own schedule. Visit http://www.vmware.com/vmwarestore or contact your local reseller for more specific information on the latest available Acceleration Kit offerings.

VMware vSphere Essentials Kits

VMware vSphere Essentials Kits are all-in-one solutions for small environments (up to three hosts with two CPUs each) available in two editions: Essentials and Essentials Plus (see Figure 2). Each kit consists of six processor licenses for vSphere, and a license for one instance of vCenter Server for Essentials™. Scalability limits for the Essentials Kits are product-enforced and cannot be extended other than by upgrading the whole kit to an Acceleration Kit (see Paid Edition Upgrades section). vSphere Essentials and Essentials Plus Kits are self-contained solutions and may not be decoupled, or combined with other vSphere editions.

vSphere Essentials Kit is an all-in-one solution ideal for small offices. It enables consolidation and management of applications to reduce hardware and operating costs—all with a low upfront investment. Essentials must be purchased along with a one-year subscription to software patches and updates. Support is optional and available on a per-incident basis.

vSphere Essentials Plus Kit adds features such as vSphere vMotion, vSphere HA, and vSphere Data Protection to vSphere Essentials to enable always-on IT for the small environment. Essentials Plus is ideal for small businesses that, in addition to hardware and operation cost savings, are looking for maximization of application availability and business continuity with a low upfront investment. SnS for Essentials Plus is sold separately. A minimum of one year of SnS is required.

	vSPHERE ESSENTIALS KITS		vSPHERE ACCELERATION KITS	
	Essentials	Essentials Plus	Standard	Enterprise Plus
Includes				
vSphere	6 CPUs	6 CPUs	6 CPUs	6 CPUs
vCenter Server	1 instance vCenter Server Essentials	1 instance vCenter Server Essentials	1 instance vCenter Server Standard	1 instance vCenter Server Standard
Features				
Hypervisor	•	•	•	•
vMotion and X-Switch vMotion		•	•	•
High Availability		•	•	•
Data Protection and Replication[1]		•	•	•
Fault Tolerance			2 vCPU	8 vCPU
Storage vMotion			•	•
Virtual Volumes and Storage-Policy Based Management			•	•
APIs for Storage Awareness			•	•
APIs for Array Integration, Multipathing			•	•
Content Library			•	•
vCenter High Availability			(vCenter STD)	(vCenter STD)
vCenter Backup and Restore			(vCenter STD)	(vCenter STD)
vCenter Server Appliance Migration Tool			(vCenter STD)	(vCenter STD)
Virtual Machine Encryption				•
Proactive HA				•
vSphere Integrated Containers				•
Distributed Resource Scheduler and Distributed Power Management				•
Big Data Extensions				•
Distributed Switch				•
Storage DRS				•
I/O Controls (Network and Storage) and SR-IOV				•
Host Profiles and Auto Deploy				•
Flash Read Cache				•
Cross-vCenter and Long Distance vMotion				•
vGPU				•
Predictive DRS				•

Figure 2. vSphere 6.7 Essentials Kits and vSphere 6.7 Acceleration Kits

[1] Advanced backup features (app-aware agents, replication, integration with Data Domain, etc.) are now available in vSphere Data Protection.

VMware vSphere Remote Office Branch Office

VMware vSphere Remote Office Branch Office™ Standard and vSphere Remote Office Branch Office Advanced are new vSphere editions designed specifically for IT infrastructure located in remote, distributed sites and deliver improved service levels, standardization, availability and compliance. These editions include 25 Virtual Machine (VM) licenses of the new vSphere Remote Office Branch Office Standard or vSphere Remote Office Branch Office Advanced. The flexible per VM pricing model also allows customers to deploy only the number of workloads they require in each remote site. Customers can deploy a maximum of 25 VMs per Remote Office Branch Office site. Server hosts can be managed by vCenter Server Foundation™ or vCenter Server Standard purchased separately.

vSphere Remote Office Branch Office Standard enables highly available IT infrastructure in the remote sites. This edition includes vMotion, High Availability, Data Protection and Replication, Hot Add, Fault Tolerance, Storage vMotion, Virtual Volumes and Storage-Policy Based Management.

vSphere Remote Office Branch Office Advanced enables rapid provisioning of servers, minimization of host configuration drift and enhanced visibility into regulatory compliance, across multiple sites. This edition includes vMotion, High Availability, Data Protection and Replication, Hot Add, Fault Tolerance, Storage vMotion, Virtual Volumes, Storage-Policy Based Management, Host Profiles, Auto Deploy, Distributed Switch and vSphere Integrated Containers.

For information on local currency prices for vSphere Editions and Kits visit:
http://www.vmware.com/products/datacenter-virtualization/vsphere/pricing.html

vCenter Server Editions

vCenter Server provides unified management for vSphere environments and is a required component of a complete vSphere deployment. One instance of vCenter Server is required to centrally manage virtual machines and their hosts and to enable all vSphere features.

vCenter Server is available in the following packages:

- vCenter Server for Essentials – Integrated management for vSphere Essentials Kits.
- vCenter Server Foundation – Powerful management tool for smaller environments looking to rapidly provision, monitor and control virtual machines.
- vCenter Server Standard – Highly scalable management with rapid provisioning, monitoring, orchestration and control of all virtual machines in a vSphere environment. vCenter Server High Availability does not require a separate vCenter Server Standard license for the passive or witness node.

vCENTER SERVER			
	Essentials	Foundation	Standard
Number of hosts	Up to 3	Up to 4	Unlimited
vSphere licensed managed	vSphere Essentials and vSphere Essentials Plus	vSphere Standard, vSphere Enterprise Plus, vSphere Platinum and vCloud Suite®	vSphere Standard, vSphere Enterprise Plus, vSphere Platinum, and vCloud Suite

Figure 3. vCenter Server Essentials, vCenter Server Foundation and vCenter Server Standard

For information on local currency prices for vCenter Server Editions visit: http://www.vmware.com/products/datacenter-virtualization/vsphere/pricing.html

Version Upgrade Entitlements for Existing Customers

vSphere customers with an active SnS contract are entitled to version upgrade to vSphere 6.7 at no extra charge. All version upgrades to vSphere 6.7 require acceptance of the new end-user licensing agreement (EULA), vSphere 6.7 licensing model and Terms of Service for AppDefense.

Visit the vSphere Upgrade Center for more information and to determine the appropriate upgrade path for your organization: http://www.vmware.com/products/vsphere/upgrade-center/overview.html

Version downgrades for vSphere

- vSphere can version downgrade.
- vSphere Platinum customers can choose to run any vSphere 6.5 or above version (downgrade via the My VMware® portal).
- VMware vSphere Remote Office Branch Office can version downgrade from 6.0 to 5.5U2. vCenter Server needs to be at the same version or above than the ESX® host. For example, if the ESX version is 5.5U2, vCenter Server needs to be 5.5U2 or above.

Reinstatement Options for Customers with Inactive SnS Contracts

Customers who have an expired SnS must pay reinstatement fees to purchase supported upgrades. Reinstatement fees are based on the following criteria:

- The applicable SnS fees for the current contract term
- Fees that would have been paid for the period of time that the customer's SnS contract was not active
- A 20 percent fee on the sum of the fees in the preceding two criteria

Paid Edition Upgrades

Customers may purchase and upgrade to a higher vSphere edition. For example, vSphere Standard customers may upgrade to vSphere Enterprise Plus or vSphere Platinum. When customers upgrade supported licenses to a higher edition, the original license key is deactivated and a new license key is issued for the upgraded edition. An SnS contract for the edition upgraded to must be purchased at time of upgrade purchase. This new SnS contract will be extended by the original SnS contract value remaining on the edition from which the customer upgraded. SnS contracts as short as two months are available for customers with a significant value remaining in their existing contract. This process ensures that only a single license key exists that has a single SnS contract with a single termination date.

Since vSphere Acceleration Kits decompose into individual kit components after purchase, customers upgrade using the same upgrade paths as vSphere customers. There are no Acceleration Kit to Acceleration Kit upgrades.

For information on local currency prices for vSphere Editions and Kits visit: www.vmware.com/products/vsphere/pricing.html

FAQ

Q. How is vSphere Platinum 6.7 licensed?

A. vSphere Platinum is licensed on a per-processor basis without limitation on the number of virtual machines, cores or amount of physical RAM. The license includes entitlement to both the on-premises vSphere component and the AppDefense (SaaS) component. vSphere Platinum works only with 6.5 and above versions.

Q. How many license keys will a customer get when they purchase vSphere Platinum?

A. vSphere Platinum will entitle the customer to a VMware vSphere for Platinum with AppDefense Plug-in license and a VMware AppDefense (SaaS) for Platinum subscription. The VMware vSphere for Platinum with AppDefense Plug-in license entitlement will generate one license key that the customer will activate in vCenter Server. The VMware AppDefense (SaaS) for Platinum subscription will allow the customer to create a new instance on a SaaS service.

Q. Is it acceptable to have both VMware AppDefense (SaaS) for Platinum and a VMware AppDefense subscription?

A. Yes, this is acceptable as long as license and subscription compliance are maintained.

Q. Are there VMware Acceleration Kits for vSphere?

A. Yes, there are two Acceleration Kits associated with vSphere Standard and vSphere Enterprise Plus. There are no Acceleration Kits for vSphere Platinum. Each kit consists of six processor licenses for vSphere and a license for one instance of vCenter Server Standard.

Q. Is it acceptable to have both VMware vRealize Operations on a per-VM basis and vSphere with Operations Management on a per-CPU basis (e.g., customer adds vSphere with Operations Management which is decomposed into vSphere Enterprise Plus and VMware vRealize Operations Standard into an existing VMware vRealize Operations environment)?

A. Yes, this is acceptable as long as license compliance is maintained. To be compliant in a mixed environment, you must ensure that all virtual machines are properly licensed for the functionality being used (e.g., capacity management provided by VMware vRealize® Operations™ Standard). A virtual machine can be properly licensed either through a vSphere with Operations Management™ license (on a per-processor basis) or a standalone product license (on a per-processor or per-virtual machine basis).

Q. Does the vSphere 6.7 licensing model—per-processor without limitation on the number of virtual machines, cores or amount of physical RAM—apply to vSphere 5.x and vSphere 6.x?

A. Yes. There are no restrictions on the number of cores or amount of physical RAM for vSphere 5.x and 6.x customers.

Q. Does the vSphere 6.7 licensing model apply to existing licenses of vSphere 4.x or prior?

A. No. The new vSphere licensing model applies only to new purchases of vSphere licenses or to existing licenses of vSphere 4.x or older that are version upgraded to vSphere 5.x or vSphere 6.x.

Q. When version upgrading to existing licenses for vSphere 4.x or older to vSphere 5.x or vSphere 6.x, may I maintain the vSphere 4.x licensing model?

A. No. In order to complete the upgrade, the new vSphere 5.x or vSphere 6.x EULA must be accepted.

Q. Which customers are eligible for vSphere Desktop?

A. vSphere Desktop is available to all commercial, academic, and government customers who want to purchase new licenses of vSphere for only host desktop virtualization. Customers who purchase the Horizon View bundles get vSphere Desktop.

Q. I am currently using vSphere Enterprise Plus to deploy a third-party desktop virtualization solution. Can I continue to do so?

A. Yes. Customers currently using vSphere as backend for a third-party VDI deployment can continue to do so.

Q. Can vSphere Desktop be used to run third-party desktop management and infrastructure tools or third-party server products for desktops?

A. As per the vSphere 6.5 EULA, vSphere Desktop standalone can be used for hosting virtual desktop machines or desktop management and monitoring tools that are used for VDI deployments only.

HOW TO BUY

For information on local currency prices for vSphere and vSphere with Operations Management Editions and Kits, visit: http://www.vmware.com/products/vsphere/pricing.html

To purchase vSphere or vSphere with Operations Management, use the online VMware Partner Locator to find an authorized reseller in your area: partnerlocator.vmware.com

You can also visit the online VMware Store to determine which kit or edition of vSphere with Operations Management or vSphere is right for your organization: vmware.com/vmwarestore/

LEARN MORE

For information or to purchase VMware products, call 877-4-VMWARE (outside of North America dial 650-427-5000), visit http://www.vmware.com/products, or search online for an authorized reseller. For detailed specifications and systems requirements, refer to the VMware vSphere documentation.

Q. What features are included in the new vRealize Log Insight™ for vCenter Server?

A. A 25 Operating System Instance (OSI) pack of vRealize Log Insight for vCenter Server is available to all vCenter Server Standard customers. vRealize Log Insight for vCenter Server captures log data from physical servers, network and storage devices, OSes, applications and more. In addition, the product provides predictive analytics for faster problem resolution. vRealize Log Insight for vCenter Server is built for the vSphere ecosystem, with powerful big data log management for vSphere and vCenter Server.

Q. Does vCenter Server High Availability require separate vCenter Server licenses for the active, passive and witness nodes?

A. No, vCenter Server High Availability does not require separate vCenter Server licenses for the active, passive and witness nodes. It only requires a single vCenter Server Standard license.

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10/18

EXHIBIT 4

VMware vSphere with Operations Management

Virtualization with Consistent Management

AT A GLANCE

Virtualizing with the Industry Leading Platform

Virtualizing helps prevent costly infrastructure sprawl. As users expand their virtualization footprint, choosing a reliable virtualization platform to run business-critical applications, scale-up and scale-out applications, maximize ROI of hardware investments, and improve performance while avoiding disruption is critical.

VMware vSphere® with Operations Management™ can help achieve your unique business needs by delivering virtualization with consistent management, purpose-built to get the best performance, availability and efficiency from your infrastructure and applications from day one.

KEY BENEFITS

- 53% reduction in cost of IT infrastructure management
- 54% decrease in downtime of tier-one applications
- 2.4X return on investment, within a year
- 30% improvement in visibility, availability, capacity utilization, and user satisfaction with IT

The industry leading and most trusted virtualization platform with consistent operations management for your data center.

About vSphere with Operations Management

VMware vSphere with Operations Management is designed to help you achieve your unique business needs by providing better insights and better IT. It helps you improve your performance and avoid disruption, with intelligent operations from apps to storage providing simplified availability and comprehensive visibility in one place. And it helps free up time so you can focus on more strategic tasks by safely automating workload placement and resource optimization on your terms, with increased control based on pre-set customizable templates.

vSphere with Operations Management provides the following capabilities:

- **Powerful Server Virtualization:** Virtualize your x86 server resources and aggregate them into logical pools for allocation of multiple workloads.
- **Efficient Storage:** Reduce the complexity of back-end storage systems and enable the most efficient storage utilization in virtual environments.
- **High Availability:** Maximize uptime across your virtualized infrastructure, reducing unplanned downtime and eliminating planned downtime for server and storage maintenance.
- **Network Services:** Get network services optimized for the virtual environment, along with simplified administration and management.
- **Platform Automation:** Lower operating expenditures and minimize errors by streamlining routine tasks with vSphere's accurate and repeatable solutions.
- **Robust Security:** Protect your data and applications with the industry's most secure "bare-metal" virtualization platform.
- **Consistent Management:** Maximize the benefits of your virtual data center with unified easy-to-use operations management.
- **Intelligent Operations:** Intelligent operations management adapts to your specific environment, giving you better insights in time to take proactive action.
- **Operations Automation:** Safely automate infrastructure management with guided remediation and customizable actions, while always staying in control.
- **Intelligent Workload Management:** Balancing plan recommends optimal placement of workloads and balances the workloads across clusters.
- **Cloud API Integration:** Provides choice on how to consume your cloud environment.

EDITIONS	STANDARD	ENTERPRISE	ENTERPRISE PLUS
Overview	Server consolidation, business continuity, and consistent operations management	Resource load balancing and consistent operations management	Enhanced application availability and performance with consistent operations management
Product Components			
License Entitlement	Per 1 CPU	Per 1 CPU	Per 1 CPU
vSphere Edition	Standard	Enterprise	Enterprise Plus
vRealize™ Operations™ Edition	Standard	Standard, with additional functionality	Standard, with additional functionality
Cloud API Integration			
VMware Integrated OpenStack			Support for VMware Integrated OpenStack is sold separately
Product Features			
Performance Monitoring and Analytics			
vSphere Performance and Health Monitoring	•	•	•
Self-learning performance analytics, and dynamic thresholds	•	•	•
Root cause analysis and recommendations	•	•	•
Operational Visibility and Management			
Predictive analytics and Smart Alerts	•	•	•
Intelligent operations groups and flexible operations policies	•	•	•
Comprehensive operations dashboards, and reporting	•	•	•
Policy Management	•	•	•
Guided Remediation	•	•	•
Automated Remediation		•	•
Capacity Management			
Capacity Metering, Trending, Right-sizing and resource optimization	•	•	•
Scenarios, Modeling, Alerting and Reporting	•	•	•
Workload Management			
Workload Balance Plans		•	•
Operational Move Actions	•	•	•
Rebalance Action		•	•
Capacity Utilization Dashboard	•	•	•

EDITIONS	STANDARD	ENTERPRISE	ENTERPRISE PLUS
Change, Configuration and Compliance Management			
vSphere security hardening	•	•	•
Business Continuity and Security			
vMotion	•	•	•
High Availability	•	•	•
vSphere™ Data Protection	•	•	•
Multi-Processor Fault Tolerance	2-vCPU	2-vCPU	4-vCPU
vShield™ Endpoint	•	•	•
vSphere Replication™	•		•
Hot Add	•	•	•
Cross-vCenter vMotion			•
Long Distance vMotion			•
Resource Prioritization and Enhanced Application Performance			
Virtual Volumes™	•	•	•
Storage-Based Policy Management	•	•	•
Reliable Memory		•	•
Big Data Extensions™		•	•
Virtual Serial Port Concentrator		•	•
Distributed Resources Scheduler™ (DRS), Distributed Power Management™ (DPM)		•	•
Storage DRS™ and Profile-Driven Storage			•
Storage and Network I/O Control			•
Single Root I/O Virtualization (SR-IOV) Support			•
Flash Read Cache™			•
NVIDIA GRID vGPU			•
Automated Administration and Provisioning			
Storage APIs for Array Integration, Multipathing		•	•
Distributed Switch™			•
Content Library	•	•	• (+ Template Deployment)
Host Profiles and Auto Deploy			•

Support and Professional Services

VMware offers global support and subscription (SnS) services to all customers. For customers requiring additional services, VMware offers professional services engagements on best practices and getting started with your deployment, both directly and through an extensive network of certified professionals: http://www.vmware.com/consulting.

Find Out More

For information or to purchase VMware products, call 877-4-VMWARE (outside North America, +1-650-427-5000), visit http://www.vmware.com/products or search online for an authorized reseller. For detailed product specifications and system requirements, refer to the vSphere with Operations Management documentation.

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EXHIBIT 5

DATASHEET

VMware vSphere and vSphere with Operations Management

Next-Gen Infrastructure for Your Next-Gen Apps

AT A GLANCE

VMware vSphere®, the industry-leading virtualization platform, fuels digital transformation by delivering a simplified customer experience, comprehensive built-in security, and a universal app platform. vSphere provides a highly available, resilient, on-demand infrastructure that is the ideal foundation of any cloud environment.

VMware vSphere® with Operations Management™ can help achieve your unique business needs by delivering virtualization with intelligent operations management, purpose-built to get the best performance, availability and efficiency from your infrastructure and applications from day one.

KEY BENEFITS

- Run any app, on any cloud
- Streamlined administration
- Operationally simple, policy-driven security
- Intelligent operations management and automation
- 53% reduction in cost of IT infrastructure management
- 54% decrease in downtime of tier-one applications
- 2.4X return on investment, within a year
- 30% improvement in visibility, availability, capacity utilization, and user satisfaction with IT

The industry-leading and most trusted virtualization platform with intelligent operations.

About vSphere and vSphere with Operations Management

VMware vSphere, the industry leading virtualization platform, provides a powerful, flexible, and secure foundation for business agility that accelerates the digital transformation to cloud computing and success in the digital economy. vSphere supports both existing and next-gen apps through its (1) simplified customer experience for automation and management at scale; (2) comprehensive built-in security for protecting data, infrastructure, and access; and (3) universal app platform for running any app, anywhere. With vSphere, customers can now run, manage, connect, and secure their applications in a common operating environment, across clouds and devices.

VMware vSphere with Operations Management is designed to help you achieve your unique business needs by providing better insights and better IT. It helps you improve your performance and avoid disruption, with intelligent operations from apps to storage providing simplified availability and comprehensive visibility in one place. And it helps free up time so you can focus on more strategic tasks by safely automating workload placement and resource optimization on your terms, with increased control based on pre-set customizable templates.

What's New in Version 6.5?

- **Scale Enhancements** – New configuration maximums to support even the largest app environments
- **VMware vCenter Server® Appliance** – The single control center and core building block for vSphere
- **vCenter Server® High Availability** – Native vCenter Server high availability solution
- **vCenter Server Backup and Restore** – Native vCenter Server Backup and Restore
- **vCenter Server Appliance Tool** – Single step migration and upgrade of existing vCenter Server to vCenter Server Appliance
- **REST APIs** – Simple, modern developer-friendly APIs
- **vSphere Client** – HTML5-based GUI that ensures fast performance and cross-platform compatibility
- **Security-at-Scale** – Policy-driven security that makes securing infrastructure operationally simple
- **Encryption** – VM-level encryption protects unauthorized data access both at-rest and in-motion
- **Audit-quality logging** – Enhanced logging that provides forensic information about user actions

- **Secure Boot** – Protection for both the hypervisor and guest operating system by ensuring images have not been tampered with and preventing loading of unauthorized components
- **vSphere Integrated Containers™** – Virtual infrastructure platform for containers
- **Proactive HA** – High availability capability that utilizes server health information and migrates VMs from degraded hosts before problem occurs
- **Cross-Cloud vMotion®** – Live migrate workloads between VMware based clouds
- **Virtual Volumes™ Replication** – Native array virtual volumes replication

EDITIONS	VSPHERE STANDARD	VSPHERE ENTERPRISE PLUS	VSPHERE WITH OPERATIONS MANAGEMENT ENTERPRISE PLUS
Use Cases	Consolidate data center hardware and enable business continuity through server virtualization, VM-aware storage and live migration capabilities. Share data center resources across the boundaries of clusters. Get stronger virtualization security with enhanced endpoint protection.	Enhance application performance and availability to boost your business productivity with vSphere. Take control of resource management. Load balance workloads and prioritize access to resources to ensure top performance for your most important applications. Rapidly provision and deploy workloads in your virtual environment and move an entire running virtual machine from one physical server to another with no downtime.	Add intelligent operations management and automation to your data center through vSphere with Operations Management. Monitor and manage health and performance, plan and optimize capacity, intelligently place and rebalance workloads for application performance, use predictive analytics to get smart alerts and ensure security hardening compliance.
Product Components			
License Entitlement	Per 1 CPU	Per 1 CPU	Per 1 CPU
vSphere Edition	Standard	Enterprise Plus	Enterprise Plus
vRealize™ Operations™ Edition	–	–	Standard
Product Features			
Server Virtualization	•	•	•
VM-Aware Storage	•	•	•
API and Policy Driven Storage Capabilities	•	•	•
Live Migration of Workloads	Cross - vSwitch	Cross - vCenter / Long Distance / Cross - Cloud	Cross - vCenter / Long Distance / Cross - Cloud
Protect VM and Data	•	•	•
Ensure System Uptime	•	•	•
Share Data Center Resources	•	•	•
Fault Tolerance	2-vCPU	4-vCPU	4-vCPU
Proactive High Availability		•	•
VM-level Encryption		•	•

EDITIONS	VSPHERE STANDARD	VSPHERE ENTERPRISE PLUS	VSPHERE WITH OPERATIONS MANAGEMENT ENTERPRISE PLUS
Integrated Containers		•	•
Centralized Network Management		•	•
Load Balancing		•	•
Prioritize Resources to Virtual Machines		•	•
Rapid Deployment and Provisioning		•	•
Accelerated Graphics for Virtual Machines		•	•
Health Monitoring and Performance Management			•
Capacity Planning and Optimization			•
Intelligent Workload Placement and Rebalance			•
Self-Learning and Predictive Analytics			•
Compliance through Security Hardening			•

Find Out More

For information or to purchase VMware products, call 877-4VMWARE (outside North America, +1-650-427-5000), visit www.vmware.com or search online for an authorized reseller. For detailed product specifications and system requirements, refer to the vSphere and vSphere with Operations Management documentation.

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EXHIBIT 6

VMware vRealize Suite and vCloud Suite

Licensing, Pricing, and Packaging

WHITE PAPER

vmware

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Executive Summary

VMware vRealize® Suite is an enterprise-ready, Cloud Management Platform (CMP) that delivers the industry's most complete solution for managing a heterogeneous, hybrid cloud. It proactively addresses health, performance and capacity management of IT services across heterogeneous and hybrid cloud environments in order to improve efficiency, performance, and availability. In addition, IT organizations can address cloud management requirements across Day 1 and Day 2 operations for compute, storage, network, and application level resources across private and public clouds.

vRealize Suite 7.0 is composed of the following integrated features:

- **Automation:** Self-service and policy-based infrastructure and application provisioning and management
- **Operations:** Intelligent health, performance and capacity management with predictive analytics
- **Business:** Automated costing, usage metering, and service pricing of virtualized infrastructure
- **Log Analytics:** Universal log collection, powerful log analytics, and enterprise-class scalability

VMware vRealize Suite can also be purchased in combination with VMware vSphere® Enterprise Plus by purchasing "**VMware vCloud Suite®**."

VMware vRealize Suite Licensing Overview

VMware vRealize Suite is licensed using Portable License Unit (PLU) that gives customers flexibility to manage workloads regardless of whether they are on-premises on vSphere, third-party hypervisors, physical servers, or supported public clouds (Figure 1). There is no license switching or conversion required.

One PLU allows usage of vRealize Suite to manage unlimited operating system instances (OSI) deployed on-premises on one vSphere CPU or up to 15 OSIs deployed on the public cloud including VMware vCloud® Air™, vCloud Air Network Partners, other supported public clouds, as well as third-party hypervisors and physical servers.

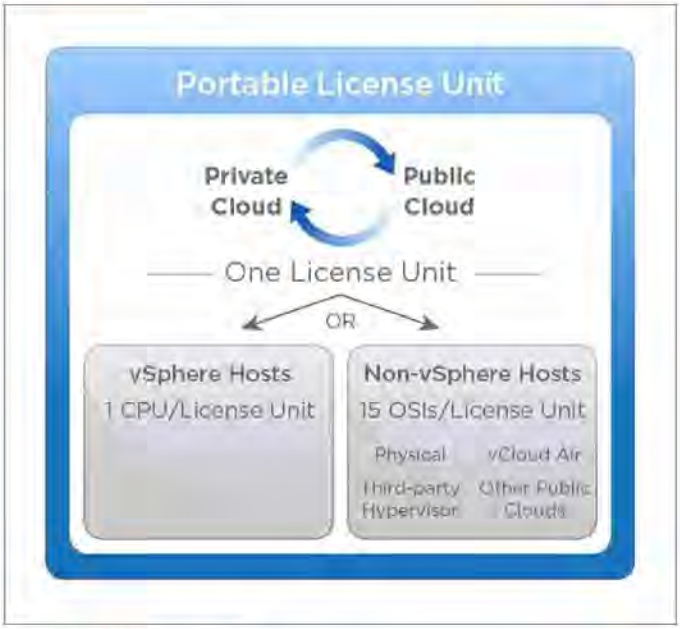

Figure 1. Portable License Unit

No Limits on Number of Virtual Machines for vSphere

There are no restrictions on the number of virtual machines that can be managed by vRealize Suite on a vSphere CPU. This requires that the CPU/processor be licensed for vRealize Suite or vCloud Suite. The managed virtual machines can use all suite components included in the licensed vRealize Suite edition.

Seamless Portability between On-Premises vSphere environment and public cloud

Through the PLU licensing metric, current deployments of vRealize Suite can switch between managing on-premises VMware vSphere workloads and managing workloads on supported public clouds as well as third-party hypervisor and physical servers. As a result, even if a VM migrates from on-premises to public cloud, the same instance of vRealize Suite can be used to manage the workloads without switching the license.

Multiple Components under a Single License

VMware vRealize Suite combines multiple components (vRealize Operations™, vRealize Automation™, vRealize Business for Cloud™, and vRealize Log Insight™) into a single offering with a single license. Many of these components are also available as standalone products licensed on a per –operating system instance (OSI) or –processor basis. However, when these components are obtained through vRealize Suite, they are licensed under a single PLU. All components included in vRealize Suite can be used to manage virtual machines on a vSphere licensed processor, on a third-party supported hypervisor, on a supported public cloud or any combination, provided that enough capacity has been purchased.

Although vRealize Suite is made up of several components, it is a single solution with a single license. All the components of a vRealize Suite edition are licensed as a single entity. A single license of vRealize Suite cannot be used across multiple processors. For example, one license cannot be used for a suite component (e.g., vRealize Operations) on one processor and another component (e.g., vRealize Log Insight) on a different processor (Figure 2).

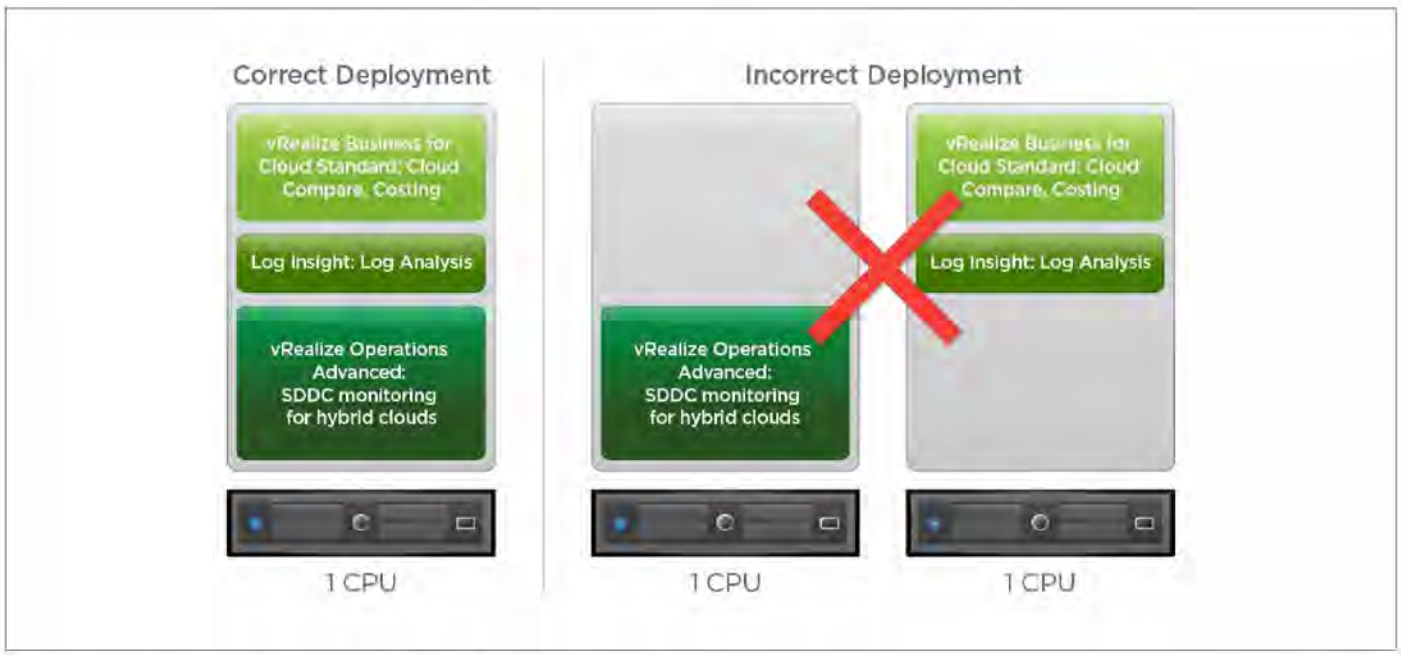

Figure 2. Correct and Incorrect Deployments using vRealize Suite Standard as an example

VMware vRealize Suite Editions

VMware offers three vRealize Suite editions that provide different functionality at different price points, making it easy to license VMware vRealize Suite to meet specific requirements and use cases (Figure 3). A support and subscription (SnS) contract is required for every vRealize Suite purchase.

- **Standard Edition –** supports Intelligent Operations Management use case for IT organizations looking to improve operational efficiency and application performance and availability via predictive analytics across structured and log data, combined with insight into IT costs.
- **Advanced Edition –** supports IT Automation to IaaS use case for companies who need to accelerate the delivery of IT infrastructure services by automating their delivery and ongoing management.
- **Enterprise Edition –** supports DevOps-Ready IT use case for IT organizations with DevOps initiatives who are looking to automate the delivery and management of full application stacks.

Figure 3. vRealize Suite Editions

VMware vCloud Suite

VMware vCloud Suite is now a package that includes VMware's market leading vSphere Enterprise Plus hypervisor with VMware vRealize Suite (Figure 4). There is an additional discount applied for customers who purchase vCloud Suite vs. customers purchasing vSphere and vRealize Suite separately. vCloud Suite has three editions, distinguished by the vRealize Suite editions.

Figure 4. vCloud Suite Editions

VMware vRealize Operations Application Monitoring Add-on

vRealize Suite Standard and Advanced edition customers who require application level monitoring have the option to purchase VMware vRealize Operations Application Monitoring Add-on. The add-on extends vRealize Suite to monitor application and databases. Third-party management packs may be required for this functionality. vRealize Operations Application Monitoring is included in the vRealize Suite Enterprise edition.

vRealize Suite Upgrades

Upgrades to vRealize Suite can be purchased from standalone products such as vRealize Operations, vRealize Automation, vRealize Business for Cloud, or vRealize Log Insight (Figure 5). If you have previously purchased the vRealize standalone products, upgrade options allow you to protect your investment in those previous purchases.

Customers can also purchase an upgrade from a lower vRealize Suite edition to a higher vRealize Suite edition. When you upgrade supported licenses to a higher VMware vRealize Suite edition, the original license key is deactivated and a new license key is issued for the upgraded edition. The SnS fee is then calculated. This new support and subscription (SnS) contract is extended by the value remaining on the base edition. This process simplifies SnS renewal by ensuring that only a single license key exists that has a single SnS contract with a single termination date.

Customers using vSphere with Operations Management Enterprise Plus can upgrade to vCloud Suite. Customers using vSphere can acquire VMware's full CMP capabilities by purchasing new vRealize Suite licenses.

Figure 5. Available Upgrade Paths

FAQ

Q. Can I upgrade a single vRealize Suite component (e.g., vRealize Operations)?

A. No, vRealize Suite is a single integrated solution with a single license that does not break down into individual licenses for each component. Upgrades are available between vRealize Suite editions.

Q. How is vRealize Suite different from vCloud Suite?

A. vCloud Suite is a bundle that consists of vRealize Suite and vSphere Enterprise Plus for vCloud Suite and is priced at a discount to purchasing vRealize Suite and vSphere Enterprise Plus separately. vCloud Suite is intended for customers who are interested in purchasing a cloud management platform solution and expanding their vSphere capacity.

Q. How does vRealize Suite integrate with or leverage vCloud Air?

A. vRealize Suite can be used to automate provisioning and management of workloads on public cloud platforms, including vCloud Air.

Q. What type of hardware infrastructure can vRealize Suite run on?

A. vRealize Suite is shipped as a vApp and will run on any hardware infrastructure that VMware's hypervisor platform (vSphere) can run on.

Q. Are there any prerequisites for purchasing vRealize Suite?

A. There are no VMware product prerequisites for vRealize Suite but there are specific IT environment configuration requirements. Check the product user guide for these requirements.

How to Buy

For information on purchasing vRealize Suite, visit http://www.vmware.com/products/vrealize-suite/pricing.html

To find an authorized reseller in your area, use the online VMware Partner Locator: http://partnerlocator.vmware.com

Learn More

For information or to purchase VMware products, call 877-4-VMWARE (outside of North America, +1 650-427-5000), visit http://www.vmware.com/products or search online for an authorized reseller. For detailed specifications and systems requirements, refer to the VMware vRealize Suite documentation.

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EXHIBIT 7

WHITE PAPER - AUGUST 2018

VMWARE vREALIZE SUITE AND vCLOUD SUITE

Licensing, Pricing, and Packaging

vmware

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Executive Summary

VMware vRealize® Suite is an enterprise-ready, Cloud Management Platform (CMP) that delivers the industry's most complete solution for managing a heterogeneous, hybrid cloud. It proactively addresses health, performance, and capacity management of IT services across heterogeneous and hybrid cloud environments in order to improve efficiency, performance, and availability. In addition, IT organizations can address cloud management requirements across Day 1 and Day 2 operations for compute, storage, network, and application level resources across private and public clouds.

vRealize Suite is composed of the following integrated features:

- **Automation:** Self-service and policy-based infrastructure and application provisioning and management
- **Operations:** Intelligent health, performance, and capacity management with predictive analytics
- **Business:** Automated costing, usage metering, and service pricing of virtualized infrastructure
- **Log Analytics:** Universal log collection, powerful log analytics, and enterprise-class scalability
- **Lifecycle Manager:** Automated installation, configuration, upgrade, patch, and content management of vRealize Suite

VMware vRealize Suite can also be purchased in combination with VMware vSphere® Enterprise Plus Edition™ by purchasing VMware vCloud Suite®.

VMware vRealize Suite Licensing Overview

VMware vRealize Suite is licensed using a Portable License Unit (PLU) that gives customers flexibility to manage workloads regardless of whether they are on-premises on vSphere, third-party hypervisors, physical servers, or supported public clouds (Figure 1). There is no license switching or conversion required.

One PLU allows usage of vRealize Suite to manage unlimited operating system instances (OSIs)/virtual machines (VMs) deployed on one on-premises vSphere CPU or one VMware Cloud™ on AWS CPU. Alternately, vRealize Suite can manage up to 15 OSIs deployed on (i) other supported public clouds, or (ii) third-party hypervisors and physical servers.

Figure 1. Portable License Unit

No Limits on Number of Virtual Machines for vSphere

There are no restrictions on the number of virtual machines that can be managed by vRealize Suite on a vSphere CPU. This requires that the CPU/processor be licensed for vRealize Suite or vCloud Suite. The managed virtual machines can use all suite components included in the licensed vRealize Suite edition.

Seamless Portability Between On-Premises vSphere Environment and Public Cloud

Through the PLU licensing metric, current deployments of vRealize Suite can switch between managing on-premises VMware vSphere workloads and managing workloads on supported public clouds as well as third-party hypervisor and physical servers. As a result, even if a VM migrates from on-premises to public cloud, the same instance of vRealize Suite can be used to manage the workloads without switching the license.

Multiple Components Under a Single License

VMware vRealize Suite combines multiple components (vRealize® Lifecycle Manager™, vRealize Operations™, vRealize Automation™, vRealize Business™ for Cloud, and vRealize Log Insight™) into a single offering with a single license. Many of these components are also available as standalone products licensed on a per-OSI or per-processor basis. However, when these components are obtained through vRealize Suite, they are licensed under a single PLU. All components included in vRealize Suite can be used to manage virtual machines on a vSphere licensed processor, on a third-party supported hypervisor, on a supported public cloud or any combination, provided that enough capacity has been purchased.

Although vRealize Suite is made up of several components, it is a single solution with a single license. All the components of a vRealize Suite edition are licensed as a single entity. A single license of vRealize Suite cannot be used across multiple processors. For example, one license cannot be used for a suite component (e.g., vRealize Operations) on one processor and another component (e.g., vRealize Log Insight) on a different processor (Figure 2).

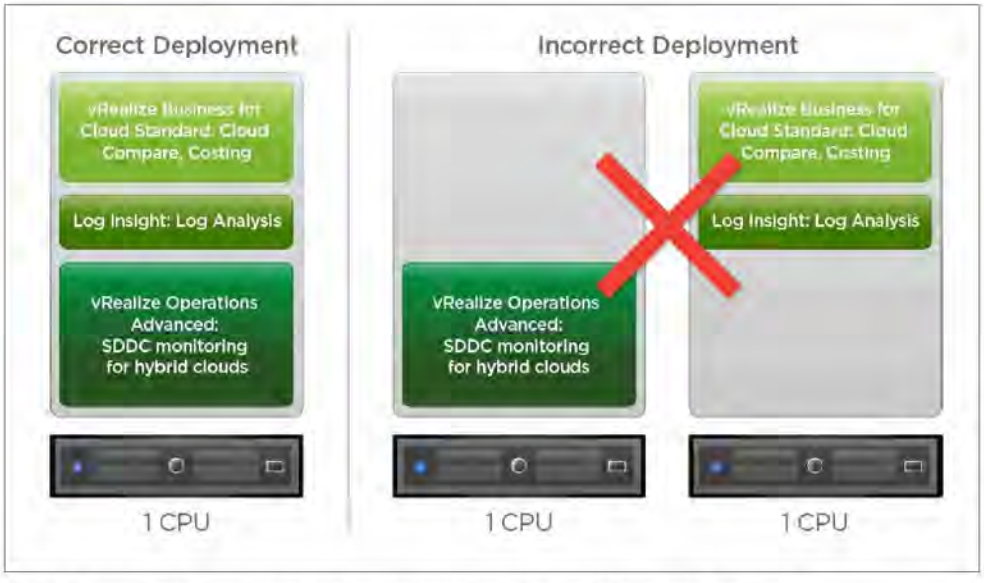

Figure 2. Correct and Incorrect Deployments using vRealize Suite Standard as an example

VMware vRealize Suite Editions

VMware offers three vRealize Suite editions that provide different functionality at different price points, making it easy to license VMware vRealize Suite to meet specific requirements and use cases (Figure 3). A support and subscription (SnS) contract is required for every vRealize Suite purchase.

- **Standard Edition** – Supports Intelligent Operations Management use case for IT organizations looking to improve operational efficiency and application performance and availability via predictive analytics across structured and log data, combined with insight into IT costs.
- **Advanced Edition** – Supports IT Automation to IaaS use case for companies who need to accelerate the delivery of IT infrastructure services by automating their delivery and ongoing management.
- **Enterprise Edition** – Supports DevOps-Ready IT use case for IT organizations with DevOps initiatives who are looking to automate the delivery and management of full application stacks. Figure 3.

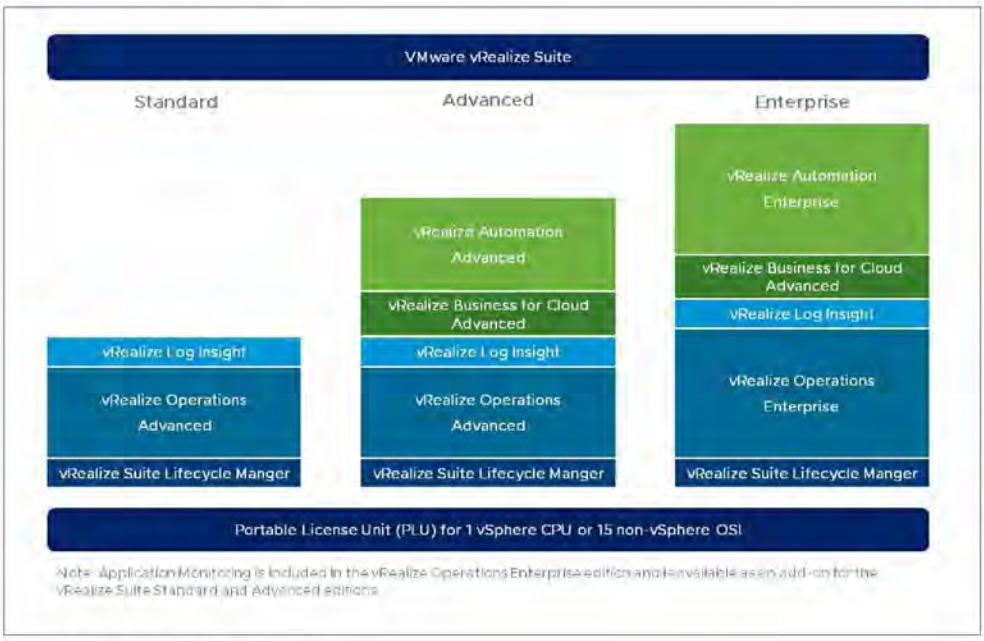

Figure 3. vRealize Suite Editions

VMware vCloud Suite

VMware vCloud Suite is now a package that includes the market-leading VMware vSphere Enterprise Plus hypervisor with VMware vRealize Suite (Figure 4). There is an additional discount applied for customers who purchase vCloud Suite vs. customers purchasing vSphere and vRealize Suite separately. vCloud Suite has three editions, distinguished by the vRealize Suite editions.

Figure 4. vCloud Suite Editions

VMware vRealize Operations Application Monitoring Add-on

vRealize Suite Standard and Advanced edition customers who require application level monitoring have the option to purchase the VMware vRealize Operations Application Monitoring Add-On™. The add-on extends vRealize Suite to monitor application and databases. Third-party management packs may be required for this functionality. vRealize Operations Application Monitoring is included in the vRealize Suite Enterprise edition.

vRealize Suite Upgrades

Upgrades to vRealize Suite can be purchased from standalone products such as vRealize Operations, vRealize Automation, vRealize Business for Cloud, or vRealize Log Insight (Figure 5). If you have previously purchased the vRealize standalone products, upgrade options allow you to protect your investment in those previous purchases.

Customers can also purchase an upgrade from a lower vRealize Suite edition to a higher vRealize Suite edition. When you upgrade supported licenses to a higher VMware vRealize Suite edition, the original license key is deactivated and a new license key is issued for the upgraded edition. The SnS fee is then calculated. This new SnS contract is extended by the value remaining on the base edition. This process simplifies SnS renewal by ensuring that only a single license key exists that has a single SnS contract with a single termination date.

Customers using vSphere with Operations Management™ Enterprise Plus can upgrade to vCloud Suite. Customers using vSphere can acquire the full CMP capabilities from VMware by purchasing new vRealize Suite licenses.

Figure 5. Available Upgrade Paths

LEARN MORE

For information or to purchase VMware products, call 877-4-VMWARE (outside of North America, +1 650-427-5000), visit http://www.vmware.com/products or search online for an authorized reseller. For detailed specifications and systems requirements, refer to the VMware vRealize Suite documentation.

FAQ

Q. Can I upgrade a single vRealize Suite component (e.g., vRealize Operations)?

A. No, vRealize Suite is a single integrated solution with a single license that does not break down into individual licenses for each component. Upgrades are available between vRealize Suite editions.

Q. How is vRealize Suite different from vCloud Suite?

A. vCloud Suite is a bundle that consists of vRealize Suite and vSphere Enterprise Plus for vCloud Suite and is priced at a discount to purchasing vRealize Suite and vSphere Enterprise Plus separately. vCloud Suite is intended for customers who are interested in purchasing a cloud management platform solution and expanding their vSphere capacity.

Q. What type of hardware infrastructure can vRealize Suite run on?

A. vRealize Suite is shipped as a vApp™ and will run on any hardware infrastructure that the VMware hypervisor platform (vSphere) can run on.

Q. Are there any prerequisites for purchasing vRealize Suite?

A. There are no VMware product prerequisites for vRealize Suite but there are specific IT environment configuration requirements. Check the product user guide for these requirements.

How to Buy

For information on purchasing vRealize Suite, visit http://www.vmware.com/products/vrealize-suite/pricing.html

To find an authorized reseller in your area, use the online VMware Partner Locator: http://partnerlocator.vmware.com

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EXHIBIT 8

DATASHEET

SELF-DRIVING OPERATIONS BY VMWARE vREALIZE OPERATIONS

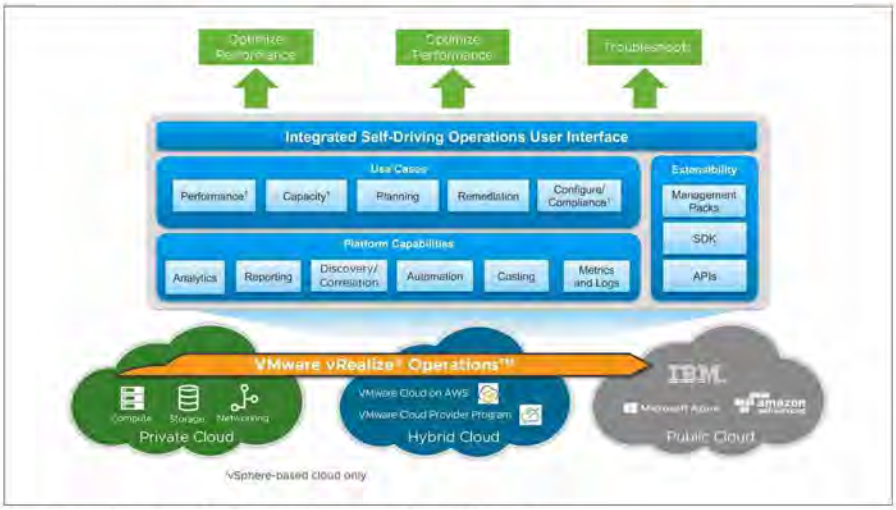
AT A GLANCE

Self-driving operations by VMware vRealize® Operations™ delivers continuous performance optimization at minimal cost driven by business and operational intent, efficient capacity management and planning and intelligent remediation. It automates and simplifies IT operations management and provides unified visibility from applications to infrastructure across physical, virtual, and cloud environments.

KEY BENEFITS

- Centralized management for software-defined data center (SDDC) and multi-cloud environments
- Intent-driven automated workload balancing and predictive DRS to resolve resource contention and enable continuous performance optimization
- Real-time, predictive capacity analytics to proactively alert on capacity risk, forecast future demand, and deliver actionable recommendations
- Integration of costs with capacity analytics to optimize utilization and reduce costs
- Cost transparency across private and public clouds to optimize planning
- Integration with vRealize Log Insight™[1] for 360-degree troubleshooting with metrics and logs in context
- Complete vSAN operations management that starts in VMware vCenter® and delivers full stack troubleshooting and capacity management
- Fully open and extensible platform

1 Sold separately as standalone and included in vCloud Suite and vRealize Suite.



Self-Driving Operations for Physical, Virtual, and Cloud Infrastructures

Self-Driving Operations Overview

VMware delivers self-driving operations from applications to infrastructure to optimize, plan and scale SDDC and multi-cloud deployments. This highly scalable, extensible, and intuitive operations platform automates and centralizes management for SDDC and cloud, delivering continuous performance optimization based on intent, efficient capacity management, proactive planning, and intelligent remediation.

Use Cases

Continuous performance optimization – Assure performance at minimal cost, driven by operational and business intent with predictive analytics driving actions to automatically balance workloads and proactively avoid contention. Automate workload balancing to reduce software license costs, optimize based on performance tiers, densify clusters, or enforce compliance.

Efficient capacity management and planning – Reduce cost and capacity risk with real-time, predictive capacity analytics delivering optimal densification and proactive planning. Predict future demand, get actionable recommendations, and automate reclamation and right-sizing. Integrate costs and capacity analytics to optimize utilization and reduce costs. Advanced what-if scenarios help plan capacity and model best-fit for new workloads across private cloud and multiple public clouds.

Intelligent remediation – Predict, prevent, and troubleshoot faster with actionable insights correlating metrics and logs and unified visibility from applications to infrastructure. Centralize IT operations management with native SDDC integrations, federated views, and a highly scalable and extensible platform. Manage SDDC technologies, like VMware vSAN™, at scale with operational visibility that starts in vCenter and delivers full environment overview, troubleshooting, and capacity management.

vRealize Operations			
	Standard	**Advanced**[2]	**Enterprise**[2]
Standalone	Per OSI/Per CPU	Per OSI/Per CPU	Per OSI
Available in Suite		VMware vRealize Suite/ vCloud Suite® Standard, Advanced (PLU)	VMware vRealize Suite/vCloud Suite Enterprise (PLU)
Scale Out Operations Platform	•	•	•
Single Sign-On	•	•	•
Remote Collectors	•	•	•
Visualization: Out-of-the-Box Dashboards, Views, Reports, Heat Map, Performance Charts	•	•	•
Performance Monitoring and Analytics	•	•	•
vSphere® Security and Compliance	•	•	•
Real-Time Predictive Capacity Management Including Trending, Metering, Right-Sizing, Optimization	•	•	•
Overall Data Center Cost Views	•	•	•
What-If Scenarios for Adding VMs to Private Cloud and VMware Cloud™ on AWS (No Costing in STD)	•	•	•
Business-Intent Based Manual Workload Optimization	•	•	•
Predictive DRS and DRS Management	•	•	•
Guided Remediation	•	•	•
vRealize Log Insight Integration	•	•	•
vSAN Overview and Migration Dashboards	•	•	•
Wavefront® Integration	•	•	•
Built-In High Availability (Automated Failover of Platform Nodes)		•	•
Customizable Dashboards, Reports, and Views		•	•
Super Metrics		•	•
Advanced APIs: Resource/Data Addition, Report Generation, etc.		•	•
Fine-Grained Cost Analytics for Reclamation, Planning and Public Cloud Cost Comparison		•	•
Additional What-If Scenarios for Hardware Procurement, or Planning Migration to VMware Cloud on AWS or AWS		•	•
Business-Intent Based Automated and Schedulable Workload Balancing		•	•
Automated Actions (EULA restricted)		•	•
vSAN Troubleshooting and Capacity Management		•	•
SDDC Health Management Pack		•	•
vRealize Orchestrator™ Management Pack		•	•
Monitoring of OS Resources (CPU, Disk, Memory, Network)		•	•

2 VMware Configuration Manager is no longer included in vRealize Operations Standalone Advanced and Enterprise editions. It is also not included in vRealize or vCloud Suites. VMware Configuration Manager is available as a separate standalone offering.

vRealize Operations	Standard	Advanced[2]	Enterprise[2]
Service Discovery and Application Dependency Mapping		•	•
Third-Party Infrastructure Management Packs: Storage, Networking, Converged/Hyperconverged as well as Non-vSphere Hypervisors		•	•
Multi-Cloud and Container Monitoring Management Packs: AWS, Azure, OpenStack, Kubernetes			•
Care System Analytics Management Pack			•
Third-Party Database, Middleware, Application Management Packs			•
Application, Middleware, and Database Monitoring			•

SELF-DRIVING OPERATIONS	
vRealize Operations Glossary of Common Terms	
Operations Platform for vSphere and vCenter	The best product to manage your VMware SDDC including monitoring, troubleshooting, capacity, configuration compliance.
Visualization: Health Map, Performance Charts, etc.	Numerous out-of-the-box dashboards are driven by widget visualizations and workflows that allow for the fastest troubleshooting and firefighting possible.
Policy Management	Allows you to manage the parts of your environment based on your business needs. Different settings/configs can be used for your production, staging, test, environment (e.g., clusters).
Performance Monitoring and Analytics	Out-of-the-box alerts and intelligent analytics
Capacity Management	Visualize CPU, memory, and disk utilization with real-time predictive analytics to project time remaining and capacity remaining. Get a view of current total cost of ownership and cost savings opportunities with built-in cost analytics. Take actions to reclaim unused capacity such as idle VMs, snapshots and powered-off VMs. Right-size VMs up or down to assure performance or save costs. Build what-if planning scenarios to model adding new VMs, purchasing hardware or migrating workloads to public cloud such as AWS or VMware Cloud on AWS.
Workload Balancing	Allows you to run your data center based on operational and business intent. • Drive better application performance • Compliance • License enforcement (save money) • Consolidation/densification (get more out of your hardware investment)
vSphere Health Monitoring and Configuration Change	vRealize Operations Manager™ evaluates the data in your environment, identifying trends in object behavior, calculating possible problems and future capacity needs for objects in your system based on those trends, and alerts you when an object exhibits defined symptoms. Compliance is used to monitor the vCenter Server® instances, hosts, virtual machines, distributed port groups, and distributed switches in your environment to ensure that the settings on your objects meet the defined standards. vRealize Operations Manager includes alerts for VMware vSphere Hardening Guide versions 6.5, 6.0, and 5.5. Hardening guides for Health Insurance Portability and Accountability Act (HIPAA) and Payment Card Industry Data Security Standard (PCI DSS) are delivered as PAK files that you upload, license, and install.

Built-In High Availability (Automated Failover of Platform Nodes)	High availability creates a replica for the vRealize Operations Manager master node and protects the analytics cluster against the loss of a node.
Customizable Dashboards, Reports, and Views	To view the status of all objects in vRealize Operations Manager, create a dashboard by adding widgets. You can create and modify dashboards and configure them to meet your environment needs. With the vRealize Operations Manager reporting functions, you can generate a report to capture details related to current or predicted resource needs. You can download the report in a PDF or CSV file format for future and offline needs.
Third-Party Management Packs: Storage, Networking, Converged/ Hyperconverged, Non-vSphere Hypervisors	You can extend the monitoring capabilities of vRealize Operations Manager by installing optional solutions from VMware or third parties. VMware solutions include adapters for Storage Devices, Log Insight, NSX® for vSphere, Network Devices, and vRealize Configuration Manager™. Third-party solutions include AWS, SCOM, EMC Smarts, and many others. To download software and documentation for optional solutions, visit the VMware Solution Exchange at https://marketplace.vmware.com/vsx/.
Multi-Cloud Monitoring Packs: AWS, VMware Integrated OpenStack, VMware Cloud Provider™ Program Partners	See above
Super Metrics	The super metric is a mathematical formula that contains one or more metrics. It is a custom metric that you design to help track combinations of metrics, either from a single object or from multiple objects. If a single metric does not inform you about the behavior of your environment, you can define a super metric.
Monitoring of OS Resources (CPU, Disk, Memory, Network)	You configure Endpoint Operations Management to gather operating system metrics and to monitor availability of remote platforms and applications. This solution is installed with vRealize Operations Manager.
Application Dependency Mapping (Now Service Discovery Management Pack)	vRealize Operations Service Discovery Management Pack discovers all the services running in each VM and then builds a relationship or dependencies between services from different VMs, based on the network communication. The management pack can create dynamic applications based on the network communication between the services and brings in the functionality into vRealize Operations Manager which was earlier provided by vRealize Infrastructure Navigator™.

LEARN MORE

For more information or to purchase VMware products call 1-877-VMWARE (outside North America, +1-650-427-5000), visit http://www.vmware.com/products, or search online for an authorized reseller. For detailed product specifications and system requirements, refer to the VMware vRealize Operations documentation at www.vmware.com/products/vrealize-operations.

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EXHIBIT 9

This Baby is Loaded! What's New with vRealize Operations 7.0 Technical Overview

John Dias posted September 20, 2018

0 Comments

It has arrived, and we are officially in a new era with vRealize Operations 7.0 which brings advancements in Self-Driving Operations to VMware customers running private, public and hybrid cloud environments. The party was just getting started when we improved the capacity engine in the 6.7 release. In 7.0, you can now put your self-driving into… well, overdrive!

In this blog post I will give you a technical overview of new and improved features in vRealize Operations 7.0. Other blogs will follow with deep detail on each of these, so keep checking back to this blog space.

Overall, there has been a lot of work done in the following areas:

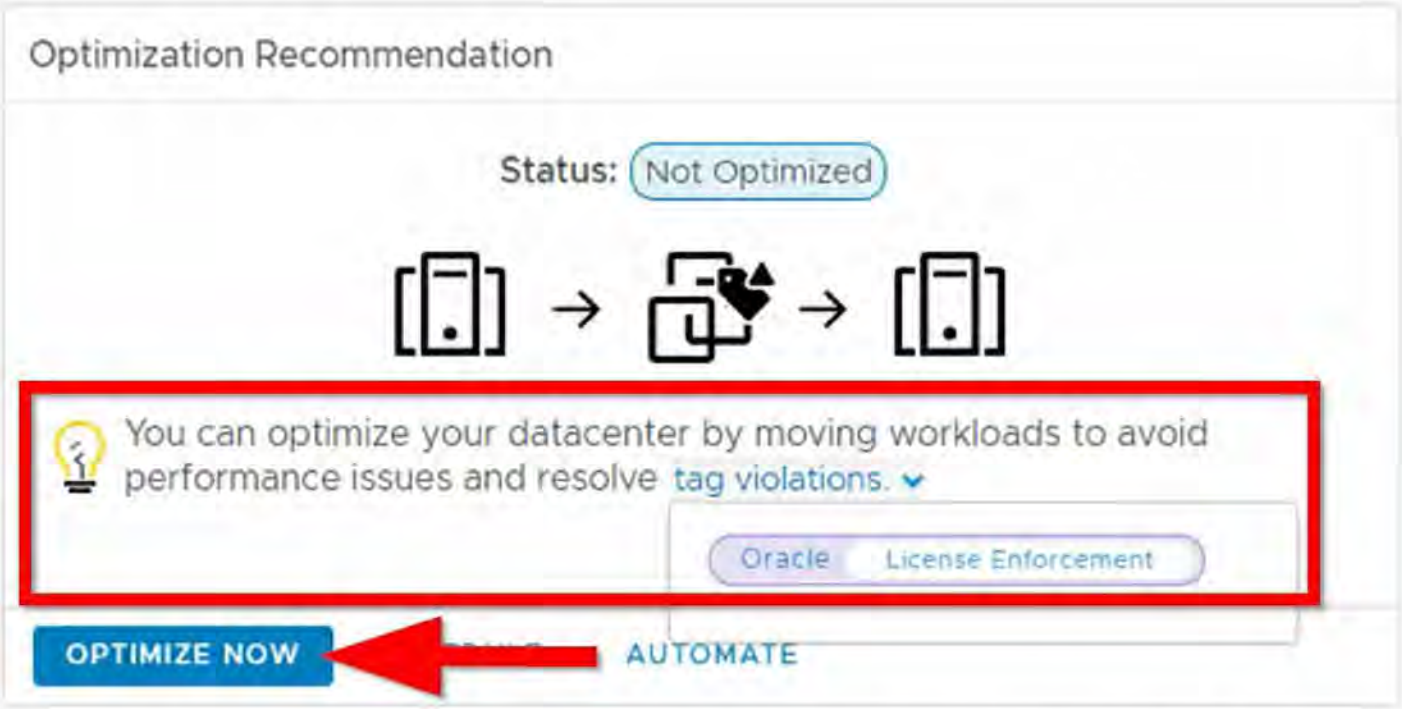
- Workload Optimization has new host-based placement, fully automated mode, a historical view, integration with vRealize Automation and more.
- Capacity improvements include new What-If scenarios for physical infrastructure planning and cloud migration. Also added is the ability to include application costs in your cost models.
- You like dashboards? You are going to love the new dashboard creation canvas! Also, we have now given you the ability to share dashboards with anyone – no login to vRealize Operations required! Improved dashboard management for orphaned content and dashboard sharing round out the list of exciting enhancements to dashboard management.
- But wait, that's not all! We have a lot more goodies to share with you such improved widgets, usability improvements, new compliance content and a few new and improved management packs to top everything off.

Let's get started!

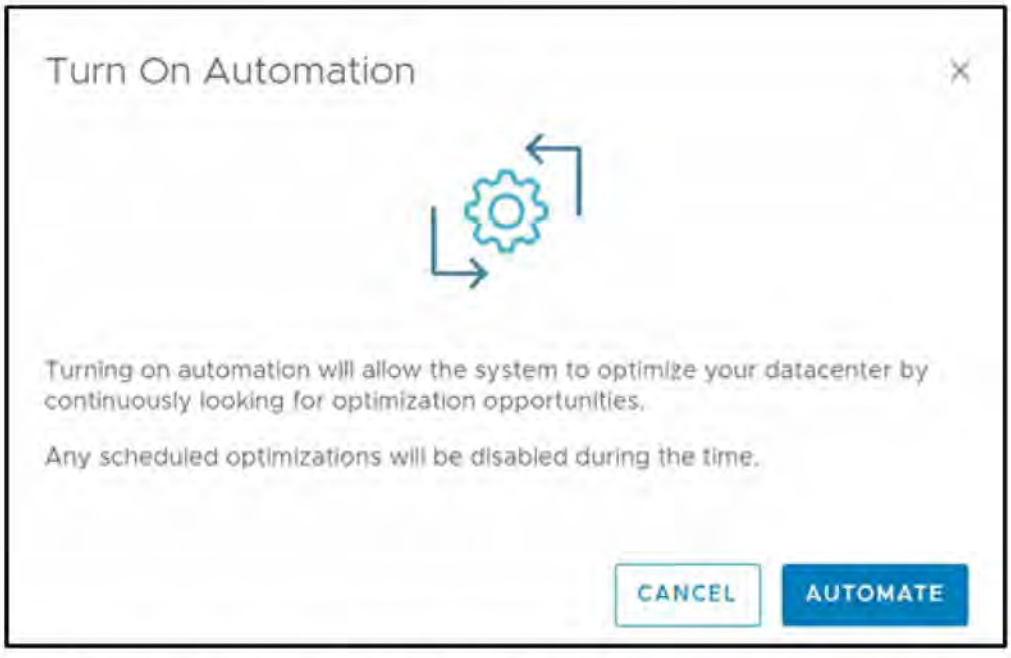
Workload Optimization in Overdrive

In the previous release, vRealize Operations allowed customers to set Business Intent to apply and enforcement placement of VMs between clusters. For example, making sure that VMs running Oracle or Microsoft software were always placed on licensed clusters. Now you can easily see if you have tag violations in the Workload

Optimization dashboard so that you know when you need to optimize for Business Intent as well as Operational Intent.



If you don't feel like logging in a clicking a button, no problem. vRealize Operations 7.0 enables full automation of Workload Optimization so you can be sure your workloads are meeting both business and operational intents around the clock.

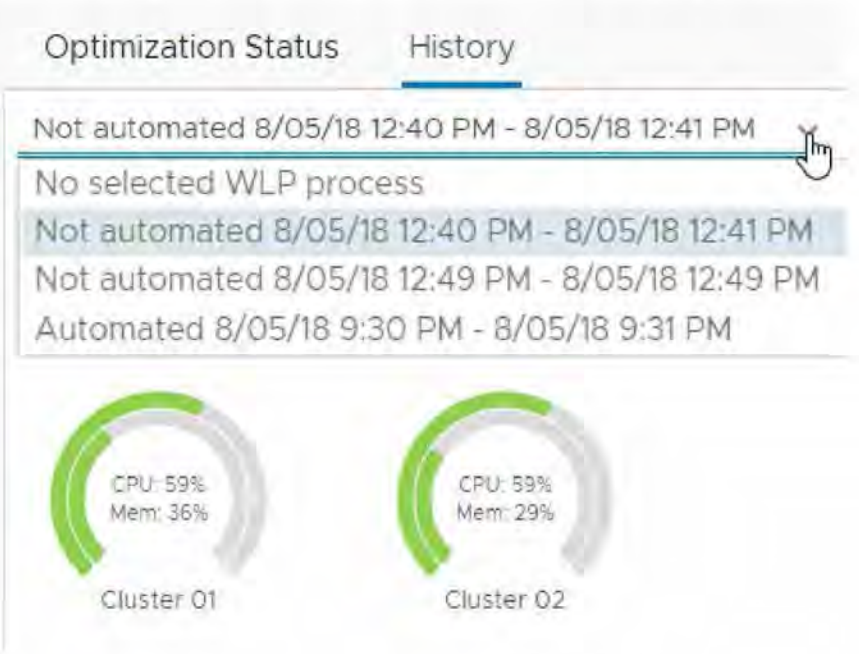


A simple click of the Automate button and vRealize Operations takes over. Here's how it works:

- Every 5 minutes vRealize Operations checks the optimization status of your Datacenters and Custom Datacenters. If it finds that a DC/CDC needs to be optimized, it runs optimization automatically for you.
- Schedules for Workload Optimization are disabled while Automation is turned on. They are reenabled when Automation is turned off.

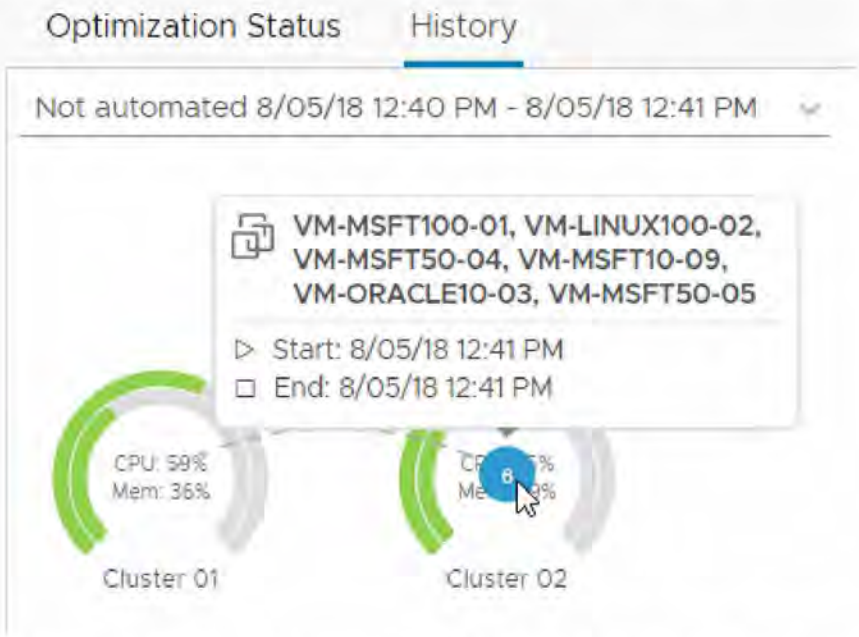
- If you wish, you can still run an optimization on demand. Simply disable Automation and the Optimize Now button will be active again.

You may ask, "How do I know what vRealize Operations is doing when Workload Optimization is automated?" And that's a great question and brings me to the next new feature – Workload Optimization History.



From the Workload Optimization page, you can open the History tab and select any WLP process to view its history. Above you can see this applies to automated and non-automated optimizations.

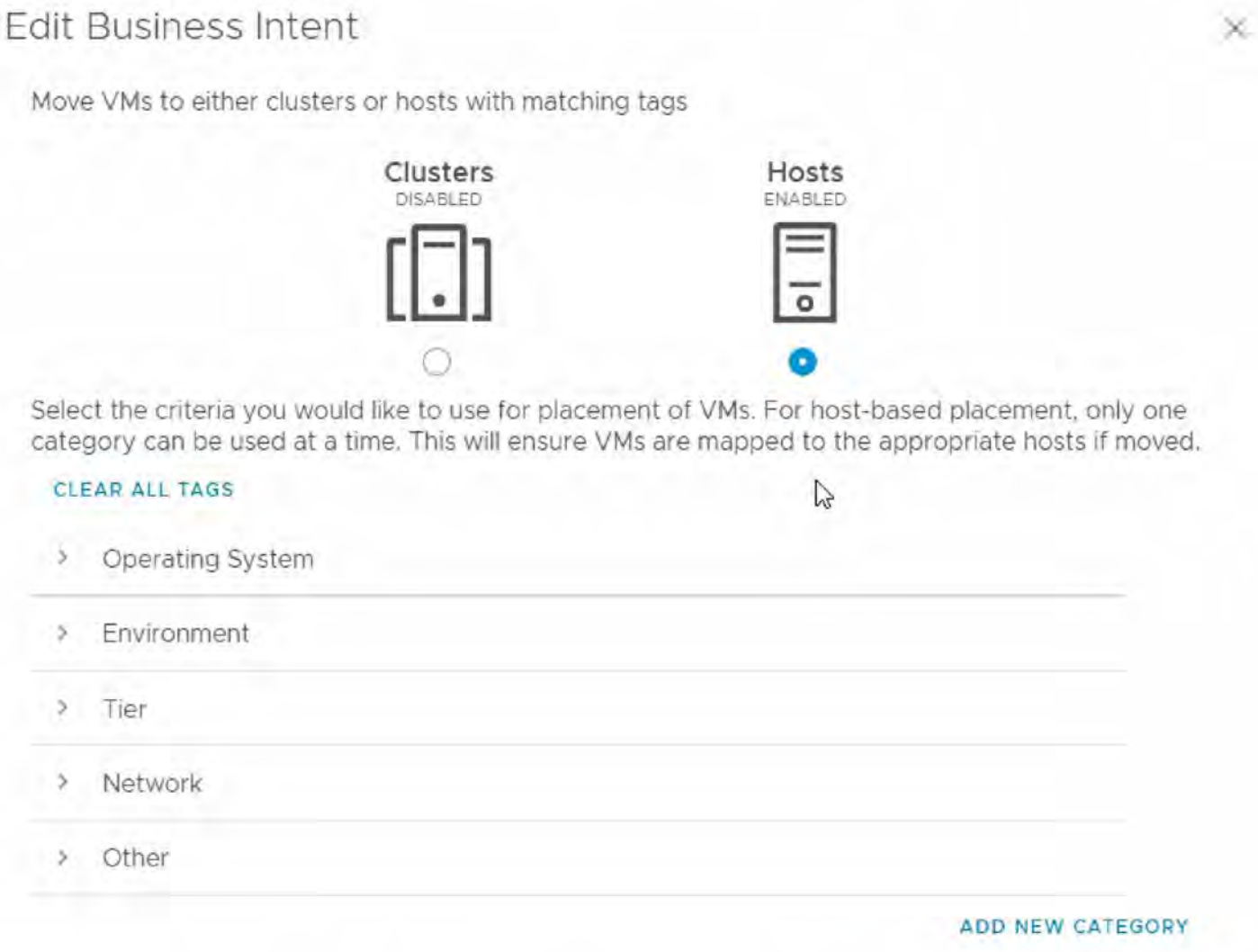
Once selected, a playback feature allows you to view the migrations that were initiated as part of the optimization for the selected timeframe (up to the previous 7 days). You can adjust replay speed, pause, zoom and more.



You can even hover over specific moves to find out which VMs move and the start/end times for the optimization.

Self-driving operations with complete visibility, including the rear-view camera!

Now let's talk about a new Business Intent capability in vRealize Operations 7.0 – Host Based Placement.

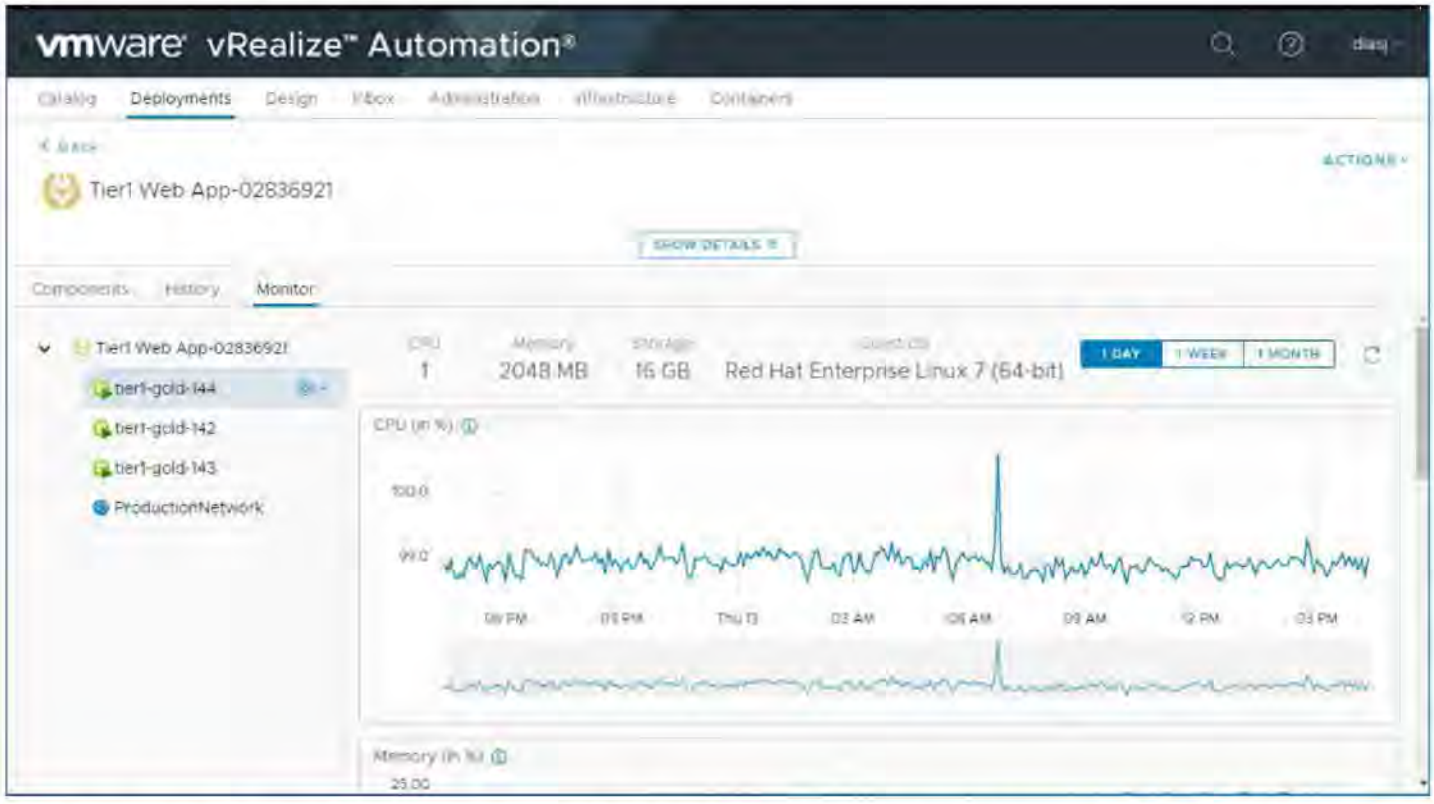


Now you can take Workload Optimization down to host level to enforce placement of VMs as needed to address software licensing, compliance, SLA tiering and more. Recall we mentioned using Workload Optimization at a cluster level to make sure VMs don't land on clusters that weren't licensed for software the VMs are running. Many customers don't want to put all their software "eggs" in a single cluster "basket" to reduce risk and increase efficiency. Now, you can apply licensing at a host level and apply business intent to make sure VMs are on the correct hosts, depending on software, OS or any other business reason.

Again, this capability uses vSphere tagging to match VMs with hosts – and it works cross cluster as well.

There is so much more to talk about with Workload Optimization in 7.0 but I want to wrap up with this important update. vRealize Operations 7.0 and vRealize Automation 7.5 work together to provide closed-loop cloud management. There are three key capabilities with this integration.

First, you can now see KPIs for CPU, memory, storage and network IO for VMs in a deployment from vRealize Automation, giving application owners visibility into VM performance.



Next, for Day 1, vRealize Automation will consult vRealize Operations for best placement of VMs in deployments. So, rather than taking a "round-robin" approach, placement is made using vRealize Operations advanced machine learning to avoid performance bottlenecks.

Finally, for Day 2, vRealize Operations will observe and obey business intent set by vRealize Automation reservation policy. Specifically, this means that vRealize Operations 7.0 is fully aware of vRealize Automation 7.5 deployments and reservations. In fact, it will automatically create a Custom Datacenter (CDC) for each vRealize Automation managed vCenter. Further, vRealize Operations knows that vRealize Automation manages business intent through its own policy and governance – so there is no need to set Business Intent in vRealize Operations for vRealize Automation CDCs. VMs will be moved only within their reservation and reservation policy will be

applied.

What-If Expanded and Other Capacity Updates

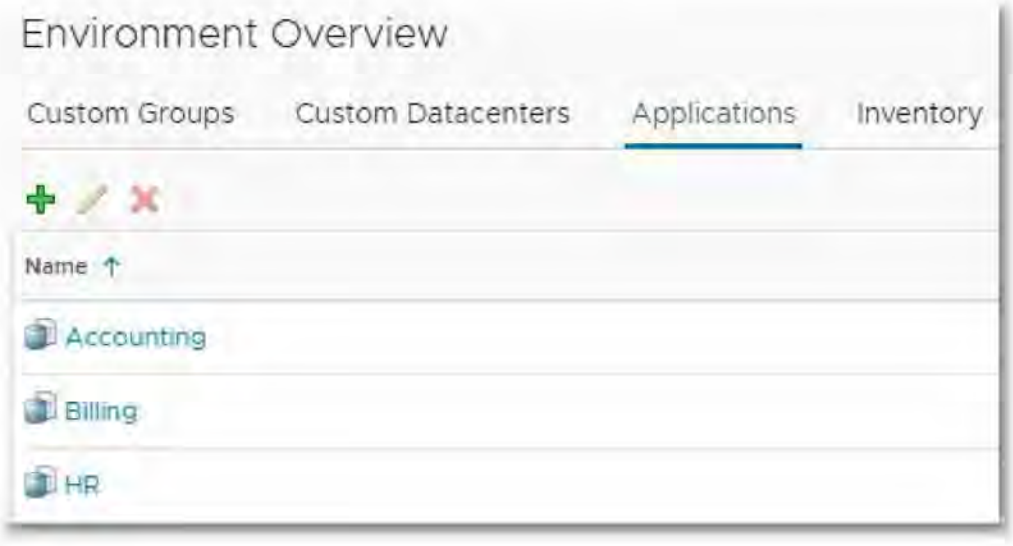
Two new What-If scenarios are added in vRealize Operations 7.0.

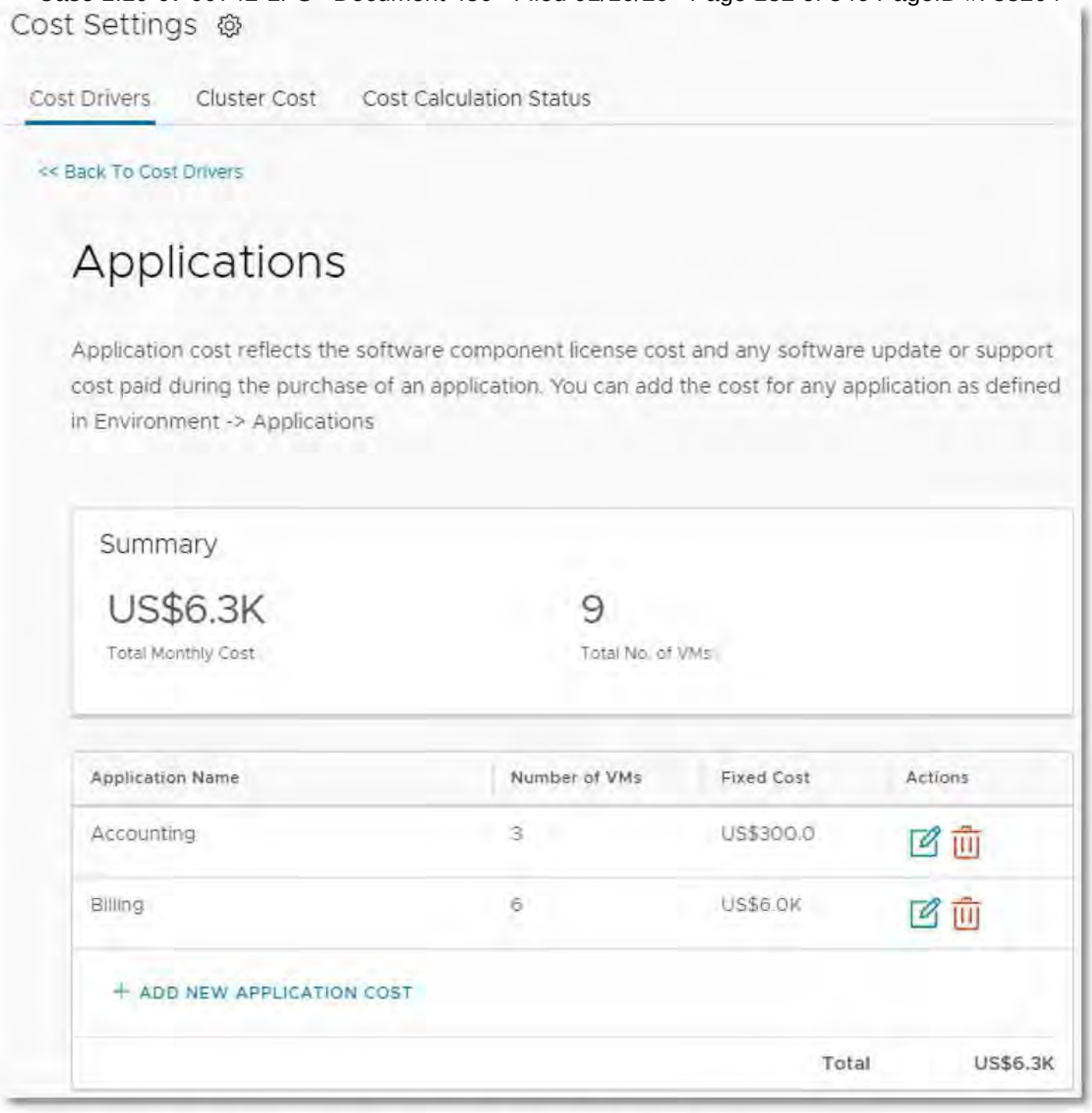
- Physical Infrastructure Planning
- Migration Planning

These provide more options for using vRealize Operations capacity analysis to understand how changes to your infrastructure will impact resources and give insight into the true cost of migrating workloads to AWS or VMware Cloud on AWS.

These scenarios work like the Workload Planning scenario delivered in vRealize Operations 6.7 – you create the scenario based on your requirements and you can run it to get results as well as save it for running again later.

In addition to the new scenarios, you can now account for application costs by creating an application and assigning a fixed monthly cost in the Cost Settings. The costs are shown after the next cost calculation (every 24 hours).





The monthly cost is distributed equally to each VM within the application.

Other capacity enhancements include "exponential decay" and "periodicity" which I will explain briefly:

- Exponential decay allows recent demand to be more heavily weighted in forecast projections.
- Calendar aware periodicity observes demand by day, recognizing patterns that occur, such as last day of the month or the first and third Monday of the month.

Together, these drive higher accuracy in capacity models and forecasts.

Also, there are some capacity metric changes you should be aware of in vRealize Operations 7.0.

- Memory|Usage(%) – uses Guest Needed Memory (KB) when available and fails back to Memory|Non Zero

Active (KB). Use this for dashboards and reports if aggressive usage numbers are desired.

- Memory|Usage(KB) – remains unchanged. It uses Guest Needed Memory (KB) when available and fails back to Memory|Consumed (KB). Workload, demand, and capacity calculations will remain conservative.

To take advantage of these changes, you should be running:

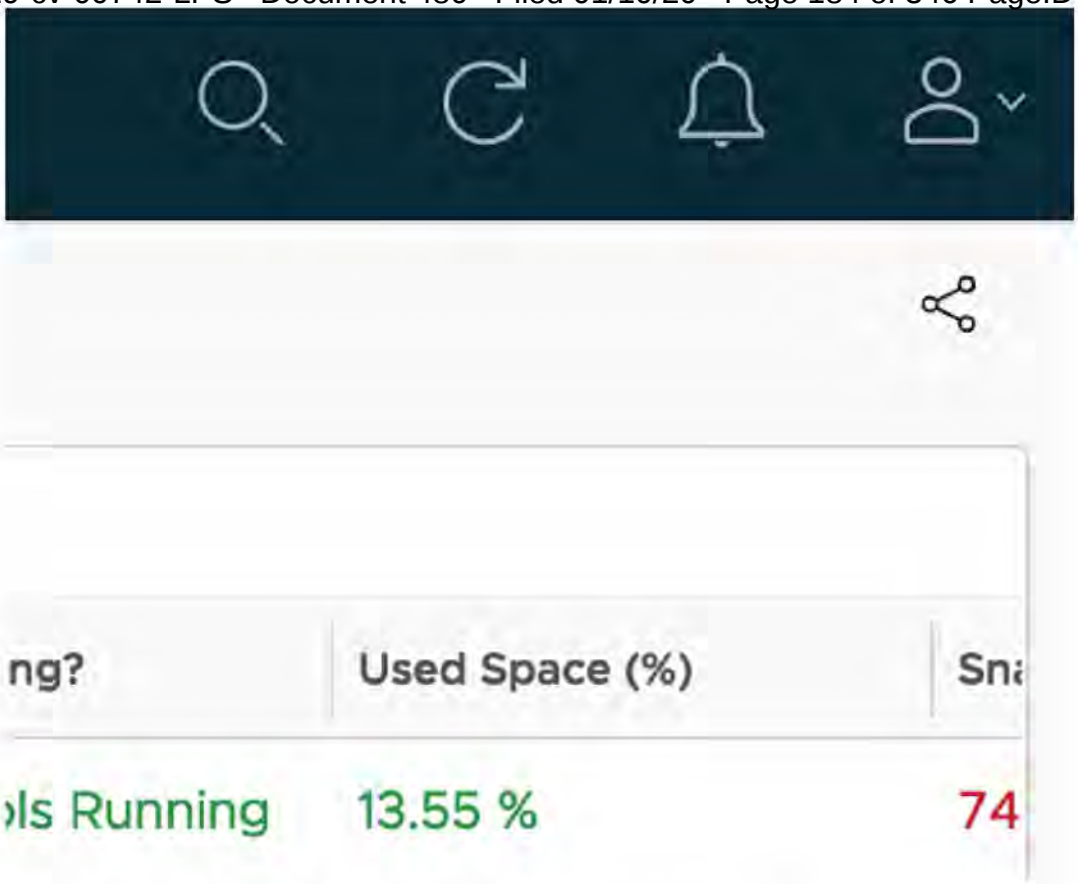
- vCenter Server 6.0 Update 1 or higher
- ESXi 6.0 Update 1 or higher
- VMware Tools 10.3.2 or 10.2.7 hot patch (Windows)
- VMware Tools 9.10.5 (Linux)

Dashboards – Create, Manage, Share

Most customers really like to create their own custom dashboards. It has been one of the most popular features of vRealize Operations since the early days and in 7.0 it got a serious overhaul. Seriously, this is going to blow your mind.

First up is the new Dashboard Canvas. Creating and editing dashboard content is now done on a nice grid-style canvas with drag and drop capability for widget placement and sizing. Also, dashboard interactions are easier to visualize and establish as you can see from this screen capture:

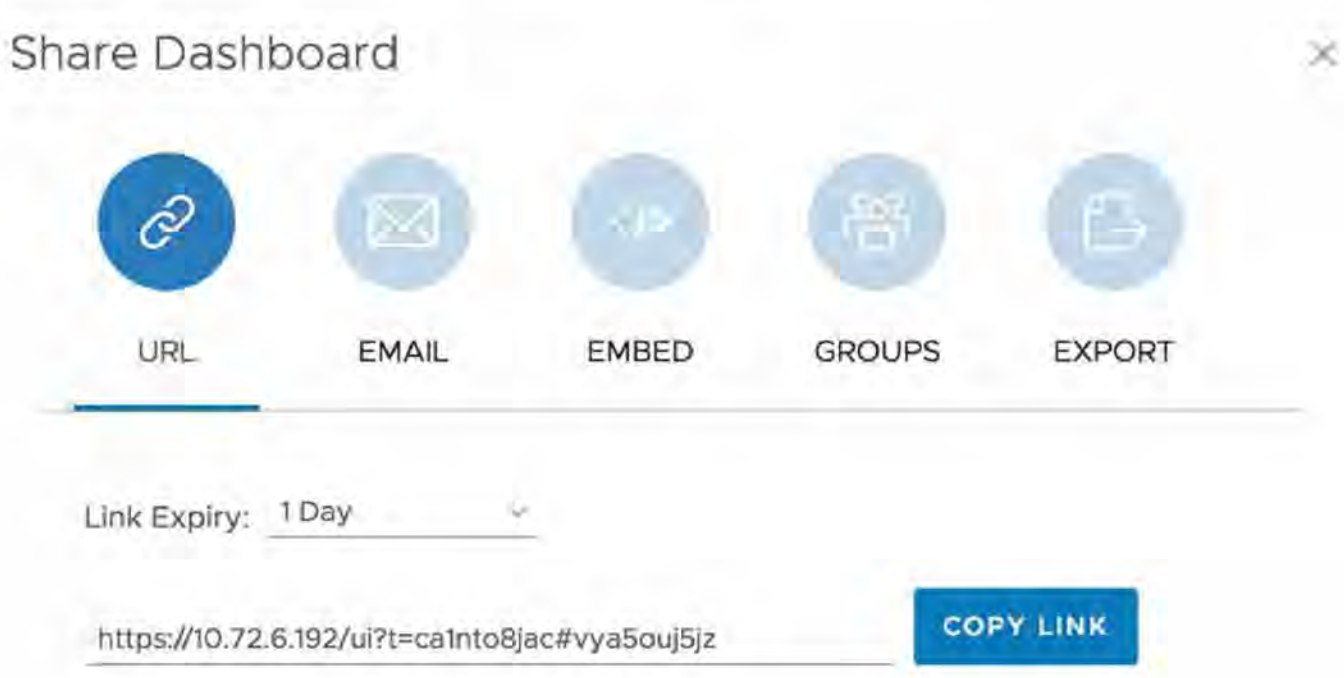
Mind blown yet? OK, check this out –



See the share icon on this dashboard? When you click it, you get the ability to:

- Create a unique URL for anyone to view the dashboard without logging in to vRealize Operations (with expiration)
- Email the dashboard to anyone
- Copy code to embed the dashboard into a web page
- Share with vRealize Operations groups
- Export the dashboard to share with the community (have you seen the new Dashboard Repository?)

This has been one of the most frequently requested features and our product team delivered a flaming arrow of dashboard hotness!



Not only does this deliver the ability to share content with your organization (leadership, app owners, business managers and more) but also gives you more and better control over dashboard sharing. For example, do you want to limit the dashboards that a group in vRealize Operations can view? Maybe an application owner would like a custom dashboard, but you don't want them poking around in your other dashboards.

Now, in vRealize Operations 7.0 you can provide specific dashboard access to vRealize Operations groups, with the ability to strictly limit access to the dashboards you want them to see. That way, application owners will only see custom dashboards for their apps and not have access to infrastructure dashboards.

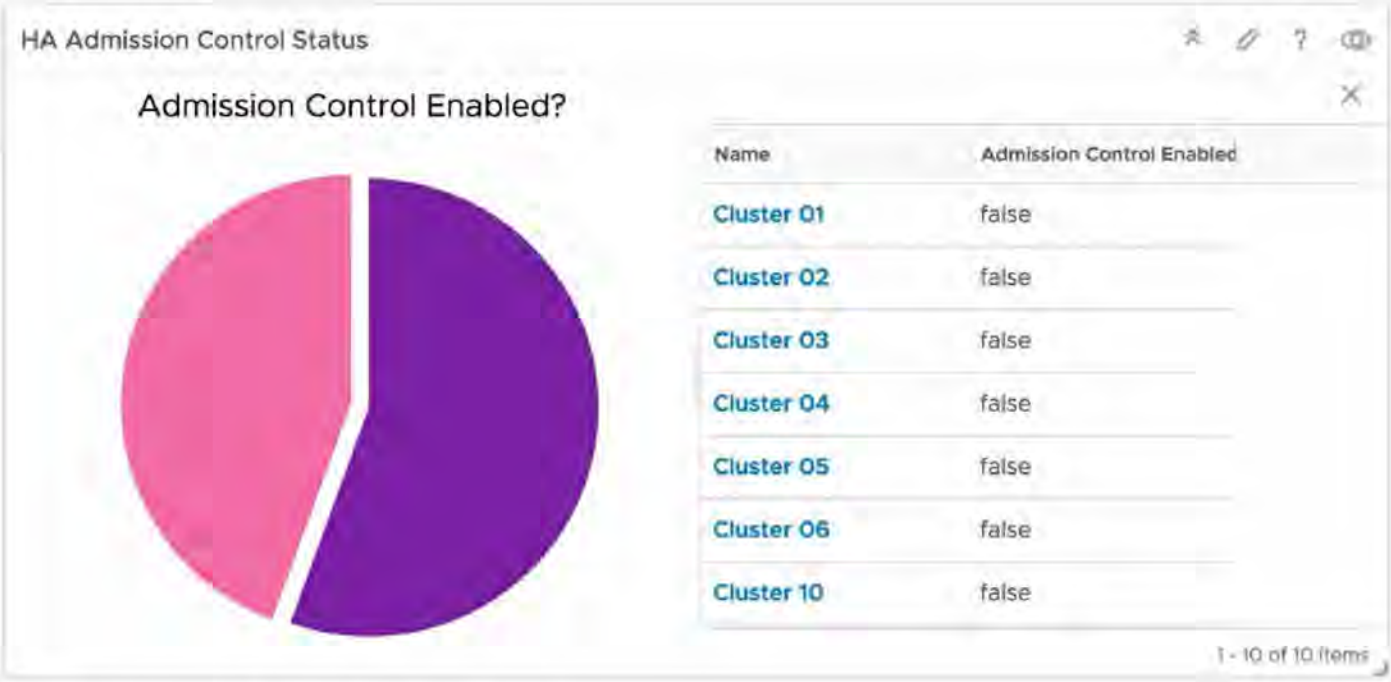
Finally, have you ever had someone create dashboards and then leave the organization? Now you can find "orphaned" content in vRealize Operations 7.0 and reassign ownership to a different user.

The Best of the Rest

Wow, that's a lot so far but there are a few other goodies I want to cover before I conclude this post. Improvements with some of the widgets were include in 7.0. Here's a brief list:

- You can now run actions directly from the Alerts Page without opening the alert first
- The Alerts List widget now allows filtering by alerts with associated actions

- Line Chart widget and Trend View now have the ability to set custom threshold lines (Warning, Immediate, Critical) to make viewing data easier to understand
- Pie Chart and Bar Chart widgets now provide a list of objects represented by each "pie" or "bar" when you click on that section.
- Additional filtering for List View to allow you to filter by ancestor objects.



Other improvements that will make you happy:

- Smarter Super Metrics that automatically convert string to numbers when the property or metric would be useful in a formula.
- Super Metrics string operations for the "Where" clause in formulas to evaluate strings such as equals, contains, starts with and ends with options (along with a "!" negator).
- Search can be limited to specific items (like dashboards, alerts, view, symptoms, Super Metrics)
- UI cluster controls for enabling SSH on nodes and configuring NTP for the cluster
- Date range selector in the All Metrics screen to limit viewing to a time frame.

Mind…. BLOWN!

We hope you are as excited about vRealize Operations 7.0 as we are and believe me, I have only scratched the surface on all the great improvements made in this release. Be sure to watch for more blogs in the next few weeks with deeper details on the above-mentioned features and other items such as new and improved management packs. To name a few:

- vSAN management improvements
- New and improved Physical Storage management pack
- vRealize Orchestrator Management pack 2.0
- AWS Management pack
- New compliance content for FISMA, DISA, ISO, CIS

Also, be sure to visit and bookmark the vRealize Suite Technical Guides web site for links to more videos, demos, guided tours and the new Dashboard Repository.

Related Posts:

vRealize Automation with Infrastructure Blueprint - Configuring Multi-developer Environment — Daniel Zilberman posted April 26, 2018

Workload Optimization – The Key to your Self-Driving Datacenter! — Dave Overbeek posted April 5, 2018

Customizing request forms using the new Custom Forms — Ivan Ivanov posted May 3, 2018

PROMO

Automate IT: Make Private Cloud Easy Hands-On Lab

RELATED POSTS

vRealize Automation with Infrastructure Blueprint - Configuring Multi-developer Environment

Daniel Zilberman posted April 26, 2018

Workload Optimization – The Key to your Self-Driving Datacenter!

Dave Overbeek posted April 5, 2018

Customizing request forms using the new Custom Forms

Ivan Ivanov posted May 3, 2018

COMMENTS

0 Comments have been added so far

VMware Technology

Virtualization
Data Center Virtualization
Desktop Virtualization
Virtualizing Business Critical Applications
Cloud Computing
Hybrid Cloud
Private Cloud Computing
Software-Defined Data Center
Business Mobility

Company Information

Leadership
Careers at VMware
Acquisitions
Office Locations
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Investor Relations
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Why Choose VMware?

News & Events

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Events
Awards
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EXHIBIT 10

Self-Driving Operations by VMware vRealize Operations

AT A GLANCE

Self-driving operations by VMware vRealize® Operations™ delivers continuous performance optimization at minimal cost driven by business and operational intent, efficient capacity management, proactive planning, intelligent remediation, and integrated compliance. It automates and simplifies IT operations management, and provides unified observability from applications to infrastructure across hybrid cloud and multi-cloud environments.

KEY BENEFITS

- Centralized management for software-defined data center (SDDC) and hybrid cloud environments
- Intent-driven automated workload balancing
- Host-based placement for software license separation and cost control
- Real-time, predictive capacity analytics to proactively alert on capacity risk, forecast demand, and deliver actionable recommendations
- Support for both demand- and allocation-based capacity models
- Integration of costs with capacity analytics
- Cost transparency across private and public clouds to optimize planning
- Integration with vRealize Log Insight™[1] for 360-degree troubleshooting with metrics and logs
- Complete VMware vSAN™/hyperconverged infrastructure (HCI) operations with automated workload balancing, full stack troubleshooting, and capacity management
- Integrated VMware vSphere® configuration and regulatory compliance
- Open and extensible platform

Self-driving operations overview

VMware delivers self-driving operations from applications to infrastructure to optimize, plan, and scale SDDC and multi-cloud deployments. This highly scalable, extensible, and intuitive operations platform automates and centralizes management for SDDC and cloud environments, delivering continuous performance optimization based on intent, efficient capacity management, proactive planning, intelligent remediation, and integrated compliance.

Use cases

Continuous performance optimization – Assure performance at minimal cost, driven by operational and business intent with predictive analytics driving actions to automatically balance workloads and proactively avoid contention. Automate workload balancing to reduce software license costs, optimize based on performance tiers, densify clusters, or enforce compliance.

Efficient capacity management and planning – Reduce cost and capacity risk with real-time, predictive capacity analytics, delivering optimal densification and proactive planning. Predict future demand, get actionable recommendations, and automate reclamation and right-sizing. Integrate costs and capacity analytics to optimize utilization and reduce costs. Advanced what-if scenarios help plan capacity and model best-fit for new workloads, hardware procurement, and migration planning to public clouds.

Intelligent remediation – Predict, prevent, and troubleshoot faster with actionable insights correlating metrics and logs, and unified observability from applications to infrastructure. Centralize IT operations management with native SDDC integrations, federated views, and a highly scalable and extensible platform.

Integrated Compliance – Reduce risk and enforce IT and regulatory standards for vSphere with integrated compliance and automated drift remediation. Ensure your environment's adherence to common requirements such as PCI and HIPAA, or create your own custom templates.

[1] Sold separately as standalone and included in vCloud Suite and vRealize Suite.

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vREALIZE OPERATIONS			
	Standard	Advanced[2]	Enterprise[2]
Standalone	Per OSI/Per CPU	Per OSI/Per CPU	Per OSI
Available in Suite		VMware vRealize Suite/ vCloud Suite® Standard, Advanced (PLU)	VMware vRealize Suite/ vCloud Suite Enterprise (PLU)
Scale Out Operations Platform	•	•	•
Single Sign-On	•	•	•
Remote Collectors	•	•	•
Visualization: Out-of-the-Box Dashboards, Views, Reports, Heat Map, Performance Charts	•	•	•
Performance Monitoring and Analytics	•	•	•
vSphere Security and Compliance, including DISA, FISMA, ISO, CIS, PCI, and HIPAA	•	•	•
Real-Time Predictive Capacity Management Including Trending, Metering, Right-Sizing, Optimization	•	•	•
Overall Data Center Costs	•	•	•
What-If Scenarios for Adding/Removing VMs	•	•	•
Business-Intent Based Manual Workload Optimization	•	•	•
Predictive DRS and DRS Management	•	•	•
Guided Remediation	•	•	•
vRealize Log Insight Integration	•	•	•
vSAN Overview and Migration Dashboards	•	•	•
Wavefront® Integration		•	•
Built-In High Availability (Automated Failover of Platform Nodes)		•	•
Customizable Dashboards, Reports, and Views		•	•
Super Metrics, Metric Correlation, Relationship Mapping		•	•
Advanced APIs: Resource/Data Addition, Report Generation, etc.		•	•
Fine-Grained Cost Analytics for Reclamation, Planning and Public Cloud Cost Comparison		•	•
What-If Scenarios: – Hardware Procurement and Decommission – Adding vSAN Capacity – Migration to VMware Cloud™ on AWS, AWS, Azure, Google, IBM, or VMware Cloud Provider Program, and custom clouds		•	•
Custom VM Profiles		•	•
Multiple What-If Stacked Scenarios		•	•
Business-Intent Based Automated and Schedulable Workload Balancing		•	•

[2] VMware Configuration Manager is no longer included in vRealize Operations Standalone Advanced and Enterprise editions. It is also not included in vRealize or vCloud Suites. VMware Configuration Manager is available as a separate standalone offering.

vREALIZE OPERATIONS			
	Standard	Advanced[2]	Enterprise[2]
Integration with vRealize Automation™ for Initial and Ongoing Placement		•	•
vSAN-Aware Workload Balancing		•	•
Host-Based Placement		•	•
Automated Actions		•	•
vSAN Performance, Capacity, and Troubleshooting		•	•
Monitoring of OS Resources (CPU, Disk, Memory, Network)		•	•
SDDC and Cloud Pod Health Management Pack		•	•
vRealize Orchestrator™ Management Pack		•	•
Custom Compliance Templates		•	•
Automated Compliance Drift Remediation		•	•
Service Discovery and Application Dependency Mapping		•	•
ServiceNow Integration		•	•
VMware Skyline™ Integration		•	•
Third-Party Infrastructure Management Packs: Storage, Networking, Converged/Hyperconverged as well as Non-vSphere Hypervisors		•	•
Out-of-the-Box Discovery, Monitoring, and Troubleshooting for Packaged Applications			•
Multi-Cloud and Container Monitoring Management Packs: AWS, Azure, OpenStack, Kubernetes			•
Care System Analytics Management Pack			•
Third-Party Database, Middleware, Application Management Packs			•

Self-Driving Operations Glossary

Operations Platform for vSphere and vCenter	The best product to manage your VMware SDDC including monitoring, troubleshooting, capacity, configuration compliance.
Visualization: Health Map, Performance Charts, etc.	Numerous out-of-the-box dashboards are driven by widget visualizations and workflows that allow for the fastest troubleshooting and firefighting possible.
Policy Management	Allows you to manage the parts of your environment based on your business needs. Different settings/configs can be used for your production, staging, test, environment (e.g., clusters).
Performance Monitoring and Analytics	Out-of-the-box alerts and intelligent analytics
Capacity Management	Visualize CPU, memory, and disk utilization with real-time predictive analytics to project time remaining and capacity remaining. Get a view of current total cost of ownership and cost savings opportunities with built-in cost analytics. Take actions to reclaim unused capacity such as idle VMs, snapshots and powered-off VMs. Right-size VMs up or down to assure performance or save costs. Build what-if planning scenarios to model adding new VMs, purchasing hardware or migrating workloads to public cloud such as AWS or VMware Cloud on AWS.
Workload Balancing	Allows you to run your data center based on operational and business intent. • Drive better application performance • Compliance • License enforcement (save money) • Consolidation/densification (get more out of your hardware investment)

vSphere Health Monitoring and Configuration Change	vRealize Operations Manager™ evaluates the data in your environment, identifying trends in object behavior, calculating possible problems and future capacity needs for objects in your system based on those trends, and alerts you when an object exhibits defined symptoms. Compliance is used to monitor the vCenter Server® instances, hosts, virtual machines, distributed port groups, and distributed switches in your environment to ensure that the settings on your objects meet the defined standards. vRealize Operations Manager includes alerts for VMware vSphere Hardening Guide versions 6.7, 6.5, 6.0, and 5.5. Hardening guides for Health Insurance Portability and Accountability Act (HIPAA) and Payment Card Industry Data Security Standard (PCI DSS) are delivered as PAK files that you upload, license, and install.
Built-In High Availability (Automated Failover of Platform Nodes)	High availability creates a replica for the vRealize Operations Manager master node and protects the analytics cluster against the loss of a node.
Customizable Dashboards, Reports, and Views	To view the status of all objects in vRealize Operations Manager, create a dashboard by adding widgets. You can create and modify dashboards and configure them to meet your environment needs. With the vRealize Operations Manager reporting functions, you can generate a report to capture details related to current or predicted resource needs. You can download the report in a PDF or CSV file format for future and offline needs.
Third-Party Management Packs: Storage, Networking, Converged/Hyperconverged, Non-vSphere Hypervisors	You can extend the monitoring capabilities of vRealize Operations Manager by installing optional solutions from VMware or third parties. VMware solutions include adapters for Storage Devices, Log Insight, NSX® for vSphere, Network Devices, and vRealize Configuration Manager™. Third-party solutions include AWS, SCOM, EMC Smarts, and many others. To download software and documentation for optional solutions, visit the VMware Solution Exchange at *https://marketplace.vmware.com/vsx/*.
Multi-Cloud Monitoring Packs: AWS, VMware Integrated OpenStack, VMware Cloud Provider™ Program Partners	See above
Super Metrics	The super metric is a mathematical formula that contains one or more metrics. It is a custom metric that you design to help track combinations of metrics, either from a single object or from multiple objects. If a single metric does not inform you about the behavior of your environment, you can define a super metric.
Monitoring of OS Resources (CPU, Disk, Memory, Network)	Telegraf agents gather operating system metrics and monitor availability of remote platforms and applications.
Application Dependency Mapping (Now Service Discovery Management Pack)	vRealize Operations Service Discovery Management Pack discovers all the services running in each VM and then builds a relationship or dependencies between services from different VMs, based on the network communication. The management pack can create dynamic applications based on the network communication between the services and brings in the functionality into vRealize Operations Manager which was earlier provided by vRealize Infrastructure Navigator™.

Learn more

For more information or to purchase VMware products, call 1-877-VMWARE (outside North America, +1-650-427-5000), visit *http://www.vmware.com/products*, or search online for an authorized reseller.

For detailed product specifications and system requirements, refer to the VMware vRealize Operations documentation at *www.vmware.com/products/vrealize-operations*.

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PLAINTIFF'S OPPOSITION

IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE

CIRBA INC. (d/b/a DENSIFY) and CIRBA IP, INC., Plaintiffs, v. VMWARE, INC., Defendant.	Civil Action No. 1:19-cv-00742-LPS JURY TRIAL DEMANDED

DENSIFY'S RESPONSE TO VMWARE'S MOTION IN LIMINE NO. 1 TO EXCLUDE EVIDENCE OR ARGUMENT OF REVENUE OR PROFITS INFORMATION

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Attorneys for Cirba Inc. (d/b/a Densify) and Cirba IP, Inc.

VMware seeks to bar Densify from introducing relevant evidence that was relied on by Densify's damages expert and otherwise is material evidence in this case. VMware incorrectly asserts that evidence relating to the consequences of VMware's conduct and to revenue information used to calculate portions of Densify's damages has no relevance and is unduly prejudicial under Fed. R. Evid. 403. In essence, VMware seeks summary judgment on aspects of Densify's damages case through an in limine motion. VMware's motion should be rejected.

Specifically, VMware seeks to exclude evidence relating to the effects of VMware's infringement, including [redacted] This evidence is relevant and material, is not unduly prejudicial, and should be admitted for a number of reasons. First, the evidence is relied upon in damages expert Jim Bergman's report. Ex. A. Mr. Bergman appropriately considered evidence relating to the adverse effects of VMware's infringement on Densify in reaching his opinion on a reasonable royalty for the infringement of Densify's patents as well as its trademark. Mr. Bergman employed the well-established analysis of *Georgia Pacific Corp. v. U.S. Plywood Corp*., 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970), *modified and aff'd*, 446 F.2d 295 (2d Cir. 1971), and considered this evidence to be directly relevant to *Georgia Pacific* factors 5 and 15. Bergman used the hypothetical negotiation framework and found that [redacted] This supported his conclusion that Densify would [redacted]. *Id*. at ¶¶ 370-73.

This analysis is entirely consistent with the approach of the Federal Circuit in *Rite–Hite Corp. v. Kelley Co.,* 56 F.3d 1538, 1554 n. 13 (Fed. Cir. 1995) (en banc). In *Rite-Hite,* the Federal

Circuit specifically approved the use of profit information in calculating a reasonable royalty, finding the district court properly considered "that Rite–Hite had consistently followed a policy of exploiting its own patents, rather than licensing to competitors; and that Rite–Hite would have had to forego a large profit by granting a license to Kelley because Kelley was a strong competitor and Rite–Hite anticipated being able to sell a large number of restraints and related products." *Id*. at 1559. *Rite Hite* confirms that consideration of the effect of lost sales and revenue is appropriate.

Second, evidence of the effects of VMware's actions is important confirming evidence of VMware's wrongful conduct and the equities of the case. Willfulness is a jury issue, and "subjective willfulness of a patent infringer, intentional or knowing, may warrant enhanced damages, without regard to whether his infringement was objectively reckless." *Exmark Man. Co. Inc. v. Briggs & Stratton Power Products Group, LLC*, 879 F.3d 1332, 1353 (Fed. Cir. 2018). As Bergman acknowledged, [redacted]." Ex. A at 370. Evidence that VMware's conduct was likely to and did seriously injure Densify confirms VMware's bad faith and further illuminates the equities of the case.

Third, Densify has a claim for lost profits in the case. "Lost-profits damages are appropriate whenever there is a 'reasonable probability that, "but for" the infringement, [the patentee] would have made the sales that were made by the infringer.'" *Rite Hite,* 56 F.3d at 1545. It is not inconsistent to have claims for both reasonable royalties and lost profits awarded in the same case, so long as they do not compensate for the same damages.[1] *E.g. Versata Software, Inc. v. SAP America, Inc.,* 717 F.3d 1255, 1267 (Fed Cir. 2013) (permitting recovery of lost profits and

[1] VMware's reliance on *Rodime, PLC v. Seagate Tech. Inc*., 174 F.3d 1294, 1308 (Fed. Cir. 1999), is misplaced, because unlike here, the Plaintiff in *Rodime* sought additional damages above and beyond a reasonable royalty. Densify will seek lost profits only as to aspects of its claims to which a reasonable royalty is not submitted to the jury.

reasonable royalty where plaintiff's expert's testimony had been excluded). Here, Defendants have indicated that they will attack Mr. Bergman on *Daubert* grounds because he did not quantify lost profits. But as *Versata* demonstrates, damage evidence is not limited to Plaintiff's expert, but can come from other evidence. *Id.* It is permissible for Densify to advance its lost profit claim and adduce evidence to permit damages to be quantified. *See Panduit Corp. v. Stahlin Bros. Fibre Works v, Inc.*, 575 F,2d 1152, 1156 (6th Cir. 1978). The evidence of the consequences of VMware's conduct is directly relevant and material to Densify's lost profits claim.

VMware also seeks to exclude evidence of the total revenues relating to accused products only. Contrary to VMware's position, Densify relies on such evidence as a starting point to establish a reasonable royalty only with respect to VMware's use of the patented technology in products for which unit sales information is not available because of the nature of the product. Ex. A, ¶ 413. Bergman has properly arrived at the royalty rate by attributing only the infringing aspects of the product. *See Ericsson, Inc. v. D-Link Systems, Inc.,* 773 F.3d 1201, 1226 (Fed. Cir. 2014) (the ultimate combination of royalty base and royalty rate must reflect the value attributable to the infringing features of the product, and no more.). As observed in *ART+COM Innovationpool GmbH v. Google Inc.*, 155 F. Supp. 3d 489, 514 (D. Del. 2016), "[A]n apportionment analysis needs to start somewhere, and simply starting with the total operating profit does not inherently invoke the entire market value rule." There is nothing improper about this limited use of revenue.

VMware seeks to avoid damaging evidence of the effects of its misconduct, but such evidence is relevant and admissible, and VMware's effort to exclude it improperly seeks summary judgment. *See Minemyer v. B-Roc Representatives, Inc.,* No. 07 C 1763, 2011 WL 1113146, at *1 (N.D. Ill. Mar. 23, 2011) (denying motion in limine to exclude all evidence of willfulness in patent infringement case, where motion effectively sought summary judgment).

December 30, 2019

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Exhibit A

Redacted In Its Entirety

Exhibit 1

Redacted In Its Entirety

Exhibit 2

Redacted In Its Entirety

Exhibit 3

Redacted In Its Entirety

Exhibit 4

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Exhibit 5

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Exhibit 8

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Exhibit 9

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Exhibit 10

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Exhibit 11

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Exhibit 15

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Exhibit 16

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Exhibit 17

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Exhibit 18

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Exhibit A

JIM W. BERGMAN

Curriculum Vitae

POSITION

President – Bergman Consulting, LLC

EDUCATION & CERTIFICATIONS

Georgia Institute of Technology
Master of Computer Science, anticipated 2021

University of California at Irvine
Master of Business Administration, 2004
Beta Gamma Sigma Honor Society

University of California at Irvine
B.A. in Economics, 1995

Chartered Financial Analyst, 2011

Microsoft Certified Systems Engineer, 1998

Certified Novell Engineer, 1996 (expired)

PROFESSIONAL AND BUSINESS EXPERIENCE

Bergman Consulting, LLC
President, January 2017 - Present

Conway MacKenzie, Inc.
Managing Director, January 2015 – January 2017

McKool Smith, P.C.
Litigation and Financial Consultant, May 2012 - January 2015

Dewey & LeBoeuf, LLP
Financial Analyst, February 2011 - May 2012

Hennigan, Bennett & Dorman, LLP
Litigation and Financial Consultant, February 2004 - February 2011

Hennigan, Bennett & Dorman, LLP
Director of Information Technology, March 1999 - February 2004

PRESENTATIONS AND PUBLICATIONS

"Determining Damages For Multiple Different IP Assertions Covering One Product – A Venn Diagrams Exercise." State Bar of California Webinar, August 2016.

"Apportionment in Patent Damages: Daubert Proof Patent Damages Using the CAFC Valuation Methodology – Careful Apportionment Using Facts and Circumstances." State Bar of California Webinar, March 2016.

"Why Nash Bargaining Is a Good Tool for Patent Damages." IP Law 360, May 2014.

PROFESSIONAL AFFILIATIONS

CFA Institute
Licensing Executives Society
Orange County Intellectual Property Law Association
Dean's Leadership Society, University California at Irvine

TESTIMONY EXPERIENCE

Proxicom Wireless, LLC v. Macy's, Inc. et al* (FLMD: 6-18-cv-00064)
Patent infringement
Expert report issued April 2019; Deposition May 2019

Pavo Solutions, LLC v. Kingston Technology Company* (CDCA: 8:14-cv-1352)
Patent infringement
Expert report issued March 2019, Deposition May 2019

Alcoa Inc. v. Universal Alloy Corporation* (NDGA 15-cv-01466)
Trade secret misappropriation
Expert report issued April 2018, Deposition June 2018

SPEX Technologies, Inc. v. Western Digital Corporation et al* (CACD 8:16-cv-01799)
Patent infringement
Expert report issued March 2018, Deposition April 2018

SPEX Technologies, Inc. v. Kingston Technology Corporation et al* (CACD 8:16-cv-01790)
Patent infringement
Expert report issued March 2018, Deposition April 2018

SPEX Technologies, Inc. v. Apricorn* (CACD 8:16-cv-01803)
Patent infringement
Expert report issued March 2018, Deposition April 2018

Carolina Coupon Clearing, Inc. v. Cardinal Health Inc.* (NCMD 1:16-cv-00412)
Trade secret misappropriation and breach of contract
Expert report issued May 2017, Rebuttal report issued June 2017, Deposition July 2017

Packet Intelligence v. Sandvine Corporation* (EDTX 2:16-cv-00147)
Patent infringement
Expert report issued June 2017, Deposition June 2017, Trial testimony November 2017

Packet Intelligence v. NetScout Systems, Inc. et al* (EDTX 2:16-cv-00230)
Patent infringement
Expert report issued June 2017, Deposition June 2017, Trial testimony October 2017

*Burrito Labs, Inc. v. Sickday, LLC** (CDCA 2:15-cv-08382)
Trademark infringement
Expert report issued August 2016, Deposition September 2016

Collectors Universe v. K3B, Inc.* (AAA 01-15-0004-9862)
Trademark infringement
Expert report issued April 2016; Trial testimony June 2016

John Hendrix v. J-M Manufacturing Co. Inc. et al.* (CDCA: 5:06-cv-00055)
Qui tam
Trial testimony November 2013

Exhibit B

Exhibit B – Materials Considered

I have reviewed and considered at least the listed documents below. In addition, I have had access to all production documents that were electronically produced by any party or third-party in this litigation.

DSY00000155	DSY00001228	DSY00003321
DSY00000012	DSY00001426	DSY00004116
DSY00000013	DSY00001426	DSY00004116
DSY00000067	DSY00001531	DSY00004195
DSY00000068	DSY00001533	DSY00004195
DSY00000155	DSY00001533	DSY00004252
DSY00000183	DSY00001536	DSY00004252
DSY00000198	DSY00001761	DSY00004275
DSY00000443	DSY00001802	DSY00004341
DSY00000443	DSY00001818	DSY00004341
DSY00000459	DSY00001840	DSY00005461
DSY00000500	DSY00001860	DSY00005462
DSY00000501	DSY00002045	DSY00005529
DSY00000519	DSY00002170	DSY00005549
DSY00000519	DSY00002215	DSY00005549
DSY00000631	DSY00002388	DSY00005605
DSY00000631	DSY00002518	DSY00005611
DSY00000656	DSY00002518	DSY00005631
DSY00000659	DSY00003073	DSY00005633
DSY00000975	DSY00003075	DSY00005660
DSY00000977	DSY00003077	DSY00005660
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Cirba Inc. (d/b/a Densify) and Cirba IP, Inc. complaint for patent infringement against VMware, Inc., and exhibits thereto.

Densify First Amended Complaint dated June 18, 2019 and exhibits thereto.

Defendant VMware, Inc.'s Answer and Counterclaims to Cirba's First Amended Complaint, August 20, 2019 and exhibits thereto.

Plaintiffs' Opening Brief in Support of Their Motion for a Preliminary Injunction, May 6, 2019 and exhibits thereto.

Declaration of Andrew Hillier in Support of Plaintiffs' Motion for Preliminary Injunction dated May 5, 2019 and exhibits thereto.

Declaration of Dr. Vijay Madisetti in Support of Densify's Motion for Preliminary Injunction dated May 6, 2019 and exhibits thereto.

Declaration of Riyaz Somani in Support of Plaintiffs' Motion for Preliminary Injunction, May 6, 2019 and exhibits thereto.

Defendant VMware's Answering Brief in Opposition to Cirba's Motion for a Preliminary Injunction dated June 7, 2019 and exhibits thereto.

Declaration of Dr. Jason Nieh in Support of VMware's Opposition to Cirba's Motion for Preliminary Injunction dated June 7, 2019 and exhibits thereto.

Defendant VMware, Inc.'s Answer and Counterclaims to Cirba's First Amended Complaint, dated August 20, 2019 and exhibits thereto.

Plaintiff's Opening Claim Construction Brief and exhibits thereto., October 11, 2019

Declaration of Prof. Vijay Madisetti in Support of Densify's Claim Constructions, October 11, 2019 and exhibits thereto.

VMware's Opening Claim Construction Brief, October 11, 2019 and exhibits thereto.

Declaration of Dr. Jason Nieh in Support of VMware's Opening Claim Construction Brief, October 11, 2019 and exhibits thereto.

The New Oxford American Dictionary

Plaintiffs' Responsive Claim Construction Brief, October 23, 2019 and exhibits thereto.

VMware's Responsive Claim Construction Brief, October 23, 2019 and exhibits thereto.

Markman Hearing transcript, November 1, 2019.

Densify's supplemental Final Infringement Contentions claim charts and exhibits thereto

U.S. Patent No. 8,209,687

U.S. Patent No. 9,654,367

File History of U.S. Patent No. 8,209,687

File History of U.S. Patent No. 9,654,367

Densify's First Set of Interrogatories (Nos. 1-11) to VMware and exhibits there to, June 10, 2019

Defendant VMware, Inc.'s First Set of Interrogatories (Preliminary Injunction) to Plaintiffs Nos. 1-15 and exhibits there to, June 10, 2019

Cirba, Inc. and Cirba IP, Inc.'s Responses to Defendant's First Set of Interrogatories (Preliminary Injunction) to Plaintiffs Nos. 1-15 and exhibits there to, June 24, 2019

VMware, Inc.'s Responses to Plaintiffs' First Set of Interrogatories to Defendant (Nos. 1-10) and exhibits there to, June 24, 2019

Densify's Second Set of Interrogatories (Nos. 11-15) to VMware and exhibits there to, June 27, 2019

VMware, Inc.'s Responses to Plaintiffs' Second Set of Interrogatories to VMware (Nos. 11-15) and exhibits there to, July 11, 2019

VMware, Inc.'s First Amended Responses to Plaintiffs' First Set of Interrogatories to Defendant (Nos. 1-10) and exhibits there to, July 12, 2019

Cirba Inc. and Cirba IP, Inc.'s Amended and Supplemental Responses to Defendant's First Set of Interrogatories (Preliminary Injunction) to Plaintiffs Nos. 1-15 and exhibits there to, July 13, 2019

VMware, Inc.'s First Amended Responses to Plaintiffs' Second Set of Interrogatories to VMware (Nos. 11-15) and exhibits there to, July 17, 2019

VMware, Inc.'s Second Amended Responses to Plaintiffs' First Set of Interrogatories to Defendant (Nos. 1-10) and exhibits there to, July 17, 2019

Cirba Inc. and Cirba IP, Inc.'s Second Amended and Supplemental Responses to Defendant's First Set of Interrogatories (Preliminary Injunction) to Plaintiffs Nos. 1-15 and exhibits there to, July 18, 2019

VMware, Inc.'s First Supplemental Responses to Plaintiffs' First Set of Interrogatories to Defendant (Nos. 1-10) and exhibits there to, July 26, 2019

Densify's First Set of Post-Preliminary Injunction Hearing Interrogatories (Nos. 1-15) to VMware and exhibits there to, August 14, 2019

Defendant VMware, Inc.'s First Set of Post-Preliminary Injunction Hearing Interrogatories to Plaintiffs No. 1-11 and exhibits there to, August 20, 2019

Defendant's Response to Plaintiffs' First Set of Post-Preliminary Injunction Hearing Interrogatories (Nos. 1-15) and exhibits there to, August 28, 2019

Cirba Inc. and Cirba IP, Inc.'s Responses to Defendant's First Set of Post-Preliminary Injunction Hearing Interrogatories to Plaintiffs Nos. 1-11 and exhibits there to, September 3, 2019

VMware, Inc.'s Second Set of Post-Preliminary Injunction Hearing Interrogatories to Plaintiffs/Counter-Defendants Nos. 12-16 and exhibits there to, September 6, 2019

Cirba Inc. and Cirba IP, Inc.'s Responses to Defendant's Second Set of Post-Preliminary Injunction Hearing Interrogatories to Plaintiffs Nos. 12-16 and exhibits there to, September 20, 2019

Defendant's First Amended Supplemental Responses to Plaintiffs' First Set of Post-Preliminary Injunction Hearing Interrogatories (Nos. 1-15) and exhibits there to, October 4, 2019

Cirba Inc. and Cirba IP, Inc.'s First Amended and Supplemental Responses to Defendant's First Set of Post-Preliminary Injunction Hearing Interrogatories to Plaintiffs Nos. 1-11 and exhibits there to, October 14, 2019

Exhibit A - Claim Chart for the Densify Product U.S. Patent No. 8,209,687

Exhibit B - Claim Chart for the Densify Product U.S. Patent No. 9,654,367

VMware, Inc.'s Third Set of Post-Preliminary Injunction Hearing Interrogatories to Plaintiffs/Counter-Defendants No. 12 and exhibits there to, October 15, 2019

VMware, Inc.'s Fourth Set of Post-Preliminary Injunction Hearing Interrogatories to Plaintiffs/Counter-Defendants (Nos. 13-24) and exhibits there to October 17, 2019

Defendant's Second Amended and Supplemental Responses to Plaintiffs' First Set of Post-Preliminary Injunction Hearing Interrogatories (Nos. 1-15) and exhibits there to, October 18, 2019

VMware, Inc.'s Fifth Set of Post-Preliminary Injunction Hearing Interrogatories to Plaintiffs/Counter-Defendants (No. 25) and exhibits there to, October 18, 2019

Densify's Second Set of Post-Preliminary Injunction Interrogatories (Nos. 16-25) to VMware and exhibits there to, October 22, 2019

Defendant's Third Amended and Supplemental Response to Plaintiffs' First Set of Post-Preliminary Injunction Hearing Interrogatories (Nos. 1-15) and exhibits there to, October 25, 2019

Cirba Inc. and Cirba IP, Inc.'s Responses to Defendant's Third Set of Post-Preliminary Injunction Hearing Interrogatories to Plaintiffs (No. 12) and exhibits there to, October 29, 2019

Cirba Inc. and Cirba IP, Inc.'s Responses to Defendant's Fourth Set of Post-Preliminary Injunction Hearing Interrogatories to Plaintiffs (Nos. 13-24) and exhibits there to, October 31, 2019

Appendix A - Copy of Software Licensing Control Summary - Top Customers 2019

Appendix B - Customer Product Purchase List

Cirba Inc. and Cirba IP, Inc.'s Responses to Defendant's Fifth Set of Post-Preliminary Injunction Hearing Interrogatories to Plaintiffs (no. 25) and exhibits there to, November 1, 2019

VMware's Responses to Plaintiffs' Second Set of Post-Preliminary Injunction Interrogatories (Nos. 16-25) and exhibits there to, November 5, 2019

Cirba Inc. and Cirba IP, Inc.'s Supplemental Responses to Defendant's Post-Preliminary Injunction Hearing Interrogatories to Plaintiffs (Nos. 3 and 12) and exhibits there to, November 8, 2019

Defendant's Fourth Amended and Supplemental Response to Plaintiffs' First Set of Post-Preliminary Injunction Hearing Interrogatories (Nos. 1-15) and First Amended and Supplemental

Response to Plaintiffs' Second Set of Post-Preliminary Injunction Hearing Interrogatories (Nos. 16-25) and exhibits there to, November 14, 2019

Cirba Inc. and Cirba IP, Inc.'s Amended and Supplemental Responses to Defendant's Fifth Set of Post-Preliminary Injunction Hearing Interrogatories to Plaintiffs (No. 25) and exhibits there to, November 21, 2019

Defendant's Fifth Amended and Supplemental Response to Plaintiffs' First Set of Post-Preliminary Injunction Hearing Interrogatories (Nos. 1,9) and exhibits there to, November 22, 2019

VMware, Inc.’s Requests for Admission to Plaintiffs/Counter-Defendants Nos. 1-20 and exhibits there to, October 16, 2019

Densify’s First Set of Requests for Admission to Defendant VMware, Inc. and exhibits there to, October 22, 2019

Densify’s Second Set of Requests for Admission to Defendant VMware, Inc. (Nos. 20-23) and exhibits there to, October 23, 2019

Cirba Inc. and Cirba IP, Inc.’s Responses to VMware’s First Set of Requests for Admission to Plaintiffs (Nos. 1-20) and exhibits there to, October 30, 2019

VMware’s Responses to Plaintiffs’ First and Second Sets of Requests for Admission (Nos. 1-23) and exhibits there to, November 11, 2019

Cirba inc. And cirba ip, inc.’s second supplemental response to defendant’s post-preliminary injunction hearing interrogatories to plaintiffs (no. 12) 11/18/2018

Defendant’s Sixth Amended and Supplemental Response to Plaintiffs’ f1st Set of Post-Preliminary Injunction Hearing iIterrogatories (nos. 1-15) and Second Amended and Supplemental Response to Paintiffs’ Second Se of Post Preliminary injunction hearing interrogatories (nos. 16-25) dated 11/27/2019

Defendant VMware’s rule 26(a)(1) Fifth Amended Initial Disclosures dated 11/21/2019

2019 11 21 VMware 5th Amended Initial Disclosures

2019 10 30 Densify 3rd Amended and Supp Rule 26 Disclosures

2091 08 20 Densify's Paragraph 4a Disclosures - Initial Identification of Patents Products and Damages Model

2019 08 19 Densify's Identification of The Accused Products, Asserted Patentz, and Damages Model

Deposition transcript of Riyaz Somani and exhibits thereto, July 9, 2019

Deposition transcript of Jason Nieh and exhibits thereto, July 9, 2019

Deposition transcript of Vijay Madisetti and exhibits thereto, July 12, 2019

Deposition transcript of Ajay Singh and exhibits thereto, July 12, 2019

Deposition transcript of Chandra Prathuri and exhibits thereto, July 15, 2019

Deposition transcript of Andrew Hillier and exhibits thereto, July 17, 2019

Deposition transcript of Riyaz Somani and exhibits thereto, July 18, 2019

Deposition transcript of Tom Yuyitung and exhibits thereto, October 18, 2019

Deposition transcript of Gerry Smith and exhibits thereto, October 25, 2019

Deposition transcript of Yama Habibzai and exhibits thereto, October 30, 2019

Deposition transcript of David Overbeek and exhibits thereto, October 30, 2019

Deposition transcript of Andrew Hillier and exhibits thereto, October 31, 2019

Deposition transcript of Kleber Carraror and exhibits thereto, November 11, 2019

Deposition transcript of Chuck Tatham and exhibits thereto, November 6, 2019

Deposition transcript of Greg Lavender and exhibits thereto, November 13, 2019

Deposition transcript of Riyaz Somani and exhibits thereto, November 14, 2019

Deposition transcript of Scott Browne and exhibits thereto, November 19, 2019

Deposition transcript of Alex Wang and exhibits thereto, November 20, 2019

Deposition transcript of Sunny Dua and exhibits thereto, November 21, 2019

Deposition transcript of Taruna Gandhi and exhibits thereto, November 21, 2019

Deposition transcript of Jeff Pauze and exhibits thereto, November 22, 2019

Deposition transcript of Ray Boots and exhibits thereto, November 22, 2019

Deposition transcript of Monica Sharma and exhibits thereto, November 22, 2019

Deposition transcript of Pat Gelsinger and exhibits thereto, November 25, 2019

Deposition transcript of Chandra Prathuri and exhibits thereto, November 26, 2019

Deposition transcript of Rangarajan Raghuram and exhibits thereto, November 26, 2019

8/6/2019 PI Hearing Transcript

Updated Exhibits Served on December 27, 2019

Exhibit 1

Redacted In Its Entirety

Exhibit 2

Redacted In Its Entirety

Exhibit 3

Redacted In Its Entirety

Exhibit 4

Redacted In Its Entirety

Exhibit 5

Redacted In Its Entirety

Exhibit 6

Redacted In Its Entirety

Exhibit 7

Redacted In Its Entirety

Exhibit 8

Redacted In Its Entirety

Exhibit 9

Redacted In Its Entirety

Exhibit 10

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Exhibit 11

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Exhibit 12

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Exhibit 13

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Exhibit 14

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Exhibit 15

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Exhibit 16

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Exhibit 17

Redacted In Its Entirety

Exhibit 18

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Exhibit 19

Redacted In Its Entirety

DEFENDANT'S REPLY

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CIRBA INC. (d/b/a DENSIFY) and CIRBA IP, INC., *Plaintiffs*, v. VMWARE, INC., *Defendant*.	C.A. No. 19-742-LPS

VMWARE'S REPLY IN SUPPORT OF ITS MOTION IN LIMINE NO. 1 TO EXCLUDE EVIDENCE OR ARGUMENT OF IRRELEVANT AND PREJUDICIAL REVENUE OR PROFITS INFORMATION

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VMware is not seeking summary judgment. It seeks only to exclude evidence of lost profits in view of Cirba's expert's clear statement that its damages are "***solely*** based on [a] reasonable royalty analysis." (Mot. Ex. 1 ¶ 224 (emphasis added).) It would be confusing to the jury and highly prejudicial to allow Cirba to introduce evidence of lost profits, particularly because the same expert alleges he is "***unable to quantify [them]***." (*Id.* (emphasis added).)

Although Cirba claims that it has "other" non-expert evidence of lost profits "relating to the effects of VMware's infringement," it does not tie that evidence to the alleged infringement. This is true, for example, of Cirba's evidence relating to [redacted]. Cirba's expert readily admits that he could not determine "[redacted] (*Id.*) Allowing Cirba to talk in the abstract about purported losses such as layoffs—untethered to any alleged infringement—would be highly prejudicial and confusing. Nor are the purported "effects of VMware's actions" relevant to willfulness. Willfulness relates to the *character* of actions, not their *effects*. None of Cirba's cases involve a situation where a damages expert opined that lost profits could not be quantified.

Cirba does not dispute the cases holding that disclosing to the jury large revenue figures untied to the claimed inventions is highly prejudicial. This is the exact situation here. Cirba does not dispute that for [redacted] percent of the claimed damages, its expert does not rely upon revenue at all. Instead, Cirba points to four products that amount to only [redacted] of the claimed [redacted] on DRS. (Opp'n Ex. A (Corrected Ex. 6).) Cirba does not need to refer to VMWare's total revenues to calculate its damages and the small sliver to which Cirba relies concerns less than [redacted] in revenue. This is no justification to skew damages by referring to [redacted] of dollars in revenue.

Dated: January 2, 2020

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Exhibit 11E

VMWARE, INC'S MOTION IN LIMINE NO. 2

TO EXCLUDE ARGUMENT THAT SUBSEQUENT REMEDIAL MEASURE PROVES INFRINGEMENT OR WILLFULNESS

DEFENDANT'S OPENING MOTION

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CIRBA INC. (d/b/a DENSIFY) and CIRBA IP, INC., *Plaintiffs*, v. VMWARE, INC., *Defendant*.	C.A. No. 19-742-LPS

VMWARE'S MOTION IN LIMINE NO. 2 TO EXCLUDE ARGUMENT THAT SUBSEQUENT REMEDIAL MEASURE PROVES INFRINGEMENT OR WILLFULNESS

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After Cirba filed this lawsuit on April 25, 2019, VMware removed the dashboard accused of infringing the '367 patent from VMware's accused products. Under Rule 407 of the Federal Rule of Evidence, Cirba should not be permitted to argue or suggest that VMware's removal somehow shows that its prior conduct was culpable.

First and foremost, the accused "Workload Utilization Widget" dashboard does not infringe the '367 patent. Among other things, the dashboard does not compute a "score" based on an "operational policy," as all claims of the '367 patent require. [redacted]—VMware removed the dashboard from the next scheduled release of vROps (v. 8.0). (Ex. 1 at VMW01461815.)

Second, while VMware's removal of the dashboard is relevant to damages, as it cuts off Cirba's entitlement to damages after that date, it is improper for Cirba to assert that its removal is somehow an admission of infringement. Cirba should not be allowed to argue or suggest that its removal shows that VMware infringed the '367 patent or knew that it was doing so. *See* Fed. R. Evid. 407 ("When measures are taken that would have made an earlier injury or harm less likely to occur, evidence of the subsequent measures is not admissible to prove: . . . culpable conduct[.]").

Public policy strongly encourages parties to take remedial action to avoid further alleged harm. *See Vardon Golf Co. v. BBMG Golf Ltd*., 156 F.R.D. 641, 652 (N.D. Ill. 1994). Parties would be discouraged from taking remedial measures if those measures could be used against them in litigation. *See Werner v. UpJohn Co., Inc*., 628 F.2d 848, 853 (4th Cir. 1980), *cert. denied*, 449 U.S. 1080 (1981); *see also Vardon Golf Co.*, 156 F.R.D. at 653 ("Allowing evidence of subsequent remedial measures to be discovered by [Plaintiff] would create a disincentive for [Defendant] to discontinue the infringing conduct.").

This incentive applies equally in patent cases as in other cases. As both the Federal Circuit and courts in this District have recognized, a defendant's modifications to a product after it learns of a patent or is accused of infringement are inadmissible to suggest culpable conduct. *See, e.g.*, *Pall Corp v. Micron Separations, Inc.*, 66 F.3d 1211, 1221 (Fed. Cir. 1995) (testimony regarding redesign appropriate because it was not relied upon to show culpability for prior infringement, thereby avoiding Rule 407); *Johns Hopkins Univ. v. Alcon Labs. Inc.*, No. CV 15-525, 2018 WL 4178159, at *19 (D. Del. Aug. 30, 2018) (explaining that Rule 407 applies to remedial measures actually taken, and not merely contemplated, in a patent case).

Courts in other districts, too, have excluded redesign evidence in patent cases as "precisely the type of evidence that Federal Rule of Evidence 407 is designed to preclude." *Deflecto, LLC v. Dundas *Jafine Inc*.*, No. 13-0116-CV-W-ODS, 2015 WL 9413148, at *2 (W.D. Mo. Dec. 22, 2015) (excluding redesign as evidence that defendant knew previous product infringed); *see also Interactive Health LLC v. King Kong USA, Inc.*, No. CV 06-1902-VBF(PLAX), 2008 WL 11339129, at *8 (C.D. Cal. July 24, 2008) (applying Rule 407 to exclude evidence pertaining to alleged willful patent infringement); *Mikkelsen Graphic Engineering Inc. v. Zund America, Inc*., 2011 WL 1330782, *11 (E.D. Wis. 2011) (holding that disabling accused feature "qualifie[d] as a subsequent remedial measure and therefore [was] not admissible to prove culpable conduct"); *Tyco Healthcare Group LP v. Applied Medical Resources Corp*., No. 09-CV-176, 2011 WL 7563868, *3 (E.D. Tex. Sept. 23, 2011) (excluding evidence of accused infringer's redesign of accused product as evidence of infringement).

It would be unfair, highly prejudicial, and against established public policy if Cirba were permitted to present evidence or argument concerning VMware's removal of the dashboard to show infringement or willfulness. Cirba should be precluded from arguing or suggesting that the

removal of the accused feature is evidence that VMware was infringing or knew it was infringing in this case.

Dated: December 23, 2019

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EXHIBIT 1

Expand All

vRealize Operations Manager 8.0 Release Notes
Product Documentation
Related Resources
vRealize Operations Manager 7.5
vRealize Operations Manager 7.5 Release Notes
Product Documentation
Related Resources
vRealize Operations Manager 7.0
vRealize Operations Manager 7.0 Release Notes
Product Documentation
Related Resources
vRealize Operations Manager 6.7
vRealize Operations Manager 6.7 Release Notes
Product Documentation
Related Resources
vRealize Operations Manager 6.6
Release Notes
Product Documentation
Related Resources

vRealize Operations Manager 8.0 Release Notes

Last Updated 11/05/2019

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VMware vRealize Operations Manager 8.0 | 2019 | Build 14857692

VMware vRealize Operations Manager Upgrade Pack from 6.6.1, 6.7, and 7.x to 8.0 | 2019 | Build 14857694

Note: In this release, there is a single upgrade .pak file which includes the OS and vApp upgrade files.

VMware vRealize Operations Manager 8.0 Endpoint Operations Agents | 2019 | Build 14827011

VMware vRealize Operations Manager 8.0 Endpoint Operations Agents PAK Updates | 2019 | Build 14827024

VMware vRealize Operations Manager 8.0 Pre-Upgrade Assessment Tool | 2019 | Build 14876945

VMware vRealize Application Remote Collector 8.0 | 2019 | Build 14660115

Check frequently for additions and updates to these release notes.

What's in the Release Notes

The release notes cover the following topics:

- What's New?
- System Requirements
- Installing and Updating vRealize Operations Manager
- Resolved Issues
- Known Issues

What's New

Product Enhancements

The vRealize Operations Manager 8.0 release focuses on ease of use, faster time to value, an integrated cloud management platform, and extensibility to your environment through new and enhanced integrations. Within the existing tenets of performance, capacity, configuration, and compliance, this release brings in new features such as the cloud management platform, troubleshooting workbench, native service discovery, and application-aware infrastructure monitoring, which helps you manage your multi-cloud environments, hosting both traditional and modern applications.

Here are the key features and capabilities:

Continuous Performance Optimization

- Fully automated workload balancing across clusters based on business intent and operational intent for workloads running on a VMware Cloud on AWS environment.
- Integration with vRealize Automation 8.0 for initial and ongoing workload placement.

Efficient Capacity and Cost Management

- **Capacity Management Enhancements**
  - Ability to set capacity buffers for cluster and datastore cluster objects.
- **Capacity Monitoring Enhancements**
  - Ability to monitor VMware Cloud on AWS costs using bills from the VMware Cloud Service portal.
  - Ability to combine private, hybrid, and public cloud costs in dashboards and reports.
  - Ability to track outstanding and year-to-date costs.

    - Breakdown of cost:
        - By subscriptions
        - On-Demand
        - By purchase history

- **Capacity Planning Enhancements**
    - HCI capacity/cost management and planning. This release supports the infrastructure that runs vSAN software.
    - Enhanced private cloud-costing with per datacenter cost drivers:
        - Ability to specify costs per datacenter.
        - Enhanced network cost driver support for 25, 40, and 100 GB NICs.
        - Depreciation metrics for hosts.
    - Private cloud cost comparison across data centers for new workload planning:
        - Ability to compare VM costs across multiple datacenters.
        - Ability to select existing VMs or enter a profile for new VMs.
        - Ability to identify the cheapest cluster to run the workload.
        - Ability to link to the Add Workload scenario to quantify capacity shortfall.

Simplified Troubleshooting and Intelligent Remediation

- **Application Operations**
    - Enhanced ability to monitor applications using Telegraf agents. Support for twenty applications and the most commonly used operating systems. Added support for applications such as NTPD, Java, and WebSphere.
    - Ability to download Telegraf agents on Windows machines without the need to disable User Account Control (UAC).
    - Support for additional metrics, KPIs, and out-of-the-box alerts for all the supported applications.
    - Ability to view CPU, memory, and disk utilization of the top-10 processes running on a virtual machine.
    - Agent-less discovery of software processes and services running on a virtual machine.
    - Ability to intelligently build business application relationships based on discovered services.
    - Ability to troubleshoot guest operating systems and application-related issues using custom script execution.

- **Enhanced Alerting Capabilities**
    - Improved alert detail page with a simplified workflow to act on an incident.
    - Alert analysis with the **Related Alerts** tab using smart grouping to do recurrence analysis, peer impact, and relational impact.
    - Capability to automatically generate potential evidence leading to a root cause, with a quick launch into the Troubleshooting Workbench.

- **Accelerated Root Cause Analysis using the Troubleshooting Workbench**
    - A unique troubleshooting tool that leverages machine learning algorithms to provide relevant pieces of evidence to arrive at a potential root cause.
    - Leverages relationship topology and time scope to automatically create impact scope to gather evidence.
    - Ability to set up a custom scope and to dynamically add peers to a topology to gather evidence from the peers. For example, all the VMs under the same application tier.
    - Ability to expedite troubleshooting by intelligently gathering and correlating information around:
        - **Events** - Includes metrics which have breached the usual behavior and major events which have triggered, within the selected scope and time.
        - **Property changes** - Includes impactful configuration changes which were discovered, within the selected scope and time.
        - **Anomalous metrics** - Includes a ranked set of metrics which have shown patterns of drastic change, within the selected scope and time.
    - Ability to easily identify potential evidence for further analysis to arrive at a root cause.
    - Ability to run multiple troubleshooting workbenches to deal with multiple incidents.
    - Availability of multiple points to launch into the troubleshooting workbench for easy and contextual access. For example, from the Object Summary page, Alert details, and Workbench under the Home page.

SDDC Configuration and Compliance

- Enhanced and simplified workflows for compliance management. Grouping of benchmarks for easy navigation and better visual representation.
- New enhancements to regulatory and SDDC (vSphere, NSX, and vSAN) compliance content.
- Ability to monitor compliance for VMs managed by you in VMware Cloud on AWS.
- Ability to import and export custom compliance standards.

- Auto-remediation of compliance configuration drifts using the vRealize Orchestrator Management Pack.

Cloud Management Platform

- Tighter integration between vRealize Operations Manager and vRealize Automation offers benefits of a single cloud management platform.
- Ability to share common constructs such as cloud accounts, cloud zones, and projects across vRealize Operations Manager and vRealize Automation.
- Ability to understand deployment cost:
  - Evaluate upfront costs on vRealize Automation.
  - Monitor ongoing costs per VM, deployment, or project.

Platform Enhancements

- AWS and Microsoft Azure public cloud monitoring:
  - Ability to manage AWS and Microsoft Azure deployments natively.
  - Ability to discover and monitor inventory and services across multiple regions and accounts.
  - Built-in dashboards and predefined alerts to simplify troubleshooting.

- Continuous availability:
  - Capability to extend vRealize Operations Manager cluster nodes across multiple availability domains.
  - Ability of the cluster to resist up to one availability domain failure and to recover without causing any downtime.

- Runs on a new, more secure, and advanced operating system.
- Simpler workflows for management and configuration of cloud accounts and other integration accounts.
- REST API enhancements:
  - New REST API for setting the currency.
  - Support for a secure token-based authentication for API access.

- Simpler initial onboarding with guided tours.
- Enhanced Solutions Repository page for easier navigation.
- Upgrade simplification by using a single .pak file to upgrade to vRealize Operations Manager 8.0.

Dashboards, Widgets, Reports, and Views Enhancements

- Ability to re-run reports from the Generated Reports tab.
- Modern layout and menus for the Manage Dashboard, Views, and Reports pages.
- Support for the color picker for pie-charts in views.
- Support for the doughnut type pie-chart in the distribution view.

Root and Admin Password during Upgrade

During upgrade, the vRealize Operations Manager 8.0 Pre-Upgrade Assessment tool checks for a locked or expired password for the admin account or an auto-generated password for the root account. If a fault is found, the upgrade fails. For more information see KB 75195.

Date Format Change

Depending on the browser language you choose, dates are displayed in the respective language format. For example, if you set the browser language to en-GB, dates are displayed in the dd/mm/yy format.

Geode Version

The Geode version has been upgraded to version 1.7 in this release.

Workload Utilization Widget

The Workload Utilization widget has been discontinued starting from this release. In future releases, the widget will not exist, and it is recommended that you update your dashboards accordingly.

End Point Operations Management Agent

The End Point Operations Management agent functionality has been replaced with the Telegraf agent. The current release is the last release of vRealize Operations Manager in which the End Point Operations Management agent is available.

VMware Cloud on AWS SDDC

To ensure compliance of your workload on VMware Cloud on AWS, vRealize Operations Manager 8.0 includes compliance alerts for customer managed VMs.

Basic Authentication

Basic authentication using the REST API is deprecated and disabled in vRealize Operations Manager 8.0 by default. Use token-based authentication instead.

Metrics and Properties Enhancements

The following KB article describes all the metrics and properties that have been added in vRealize Operations Manager 8.0:

Metrics added in vRealize Operations Manager 8.0 (74950)

New and Updated Management Packs and Compliance Packs:

- The VMware Management Packs and Compliance Packs that are new and those that are updated with significant changes for vRealize Operations Manager 8.0 are:
  - VMware vRealize Operations Management Pack for CloudHealth 1.0
  - VMware vRealize Operations Management Pack for vRealize Orchestrator 3.1
  - VMware vRealize Operations Management Pack for NSX-T 2.2
  - vRealize Operations Management Pack for Storage Devices 8.0
  - vRealize Operations Compliance Pack for DISA 1.0.1

Refer to the VMware Product Interoperability Matrix for all VMware Management Packs supported with vRealize Operations Manager 8.0.
The 3rd party authored Management Packs that are supported with 8.0 are listed in the VMware Compatibility Guide.

System Requirements

Review this section before you install or update vRealize Operations Manager.

Sizing and Scaling

The CPU, memory, and disk requirements that meet the needs of a particular environment depend on the number and type of objects in your environment and data collected. This includes the number and type of adapters installed, the use of HA (High Availability) and CA (Continuous Availability), the duration of data retention, and the quantity of specific data points of interest. VMware updates Knowledge Base article 2093783 with the most current information about sizing and scaling. The Knowledge Base article includes overall maximums and spreadsheet calculations that provide a recommendation based on the number of objects and metrics you expect to monitor.

Deployment Formats

You can deploy vRealize Operations Manager 8.0 with VMware virtual appliance.

If you are deploying a vRealize Operations Manager virtual appliance, use a VMware vSphere Client to connect to a VMware vCenter Server, and deploy the virtual appliance through the vCenter Server instance. The vRealize Operations Manager virtual appliance must be deployed on hosts that are:

- ESX/ESXi 6.0 or later (with the exception of ESX/ESXi 6.5 that must be with a patch not lower than ESX/ESXi 6.5 Update 1) and managed by VMware vCenter Server 6.0 or later.
  - ESX/ESXi 6.5 with build number lower than 5969303 must be updated to a higher patch.
- If you have vRealize Operations Manager virtual appliance deployed on ESXi 5.5 hosts, you must first upgrade the vCenter Server to versions 6.0 or 6.5, and then upgrade to vRealize Operations Manager 8.0.

Applying License Keys

IMPORTANT: A new license key is required for upgrading vRealize Operations Manager 7.0 and later versions. All license keys except vRealize Operations for Horizon, vSOM Enterprise Plus and its add-ons are invalidated. The product will work in evaluation mode until a new valid license key, which can be obtained from the MyVMware portal, is installed. After you log in to the user interface of vRealize Operations Manager, if you see that you are using an evaluation license, consider applying for a new license before the end of the 60-day evaluation period.

For more details on entitlements of vRealize Operations editions, see the edition comparison table from the following link: https://www.vmware.com/products/vrealize-operations.html.

SDDC Compliance

To ensure compliance of your vSphere, VMware Cloud on AWS, and vSAN 6.7, 6.5, and 6.0 objects, and also NSX-T 2.3, 2.4, and 2.5, and NSX-V 6.3.x and 6.4.x objects, vRealize Operations Manager 8.0 includes compliance alerts for VMware vSphere Security Configuration Guide versions 6.7 Update 1, 6.5, and 6.0. These security configuration guide alerts are based on the corresponding object types. Some of the alerts and symptoms are available only for backward compatibility with older versions of vSphere, even though the current release supports the latest vSphere Security Configuration Guide 6.7 Update 1.

Solutions Support

In addition to the VMware solutions (vSphere, Endpoint Operations Management, and vRealize Log Insight), see the Solution Exchange marketplace for many more solutions. These solutions work with Virtual Appliance single or multiple nodes.

TLS Support

When you upgrade your vRealize Operations Manager instance to 8.0, both TLS 1.0 and TLS 1.1 are disabled on all the vRealize Operations Manager nodes. TLS 1.2 is the only protocol that will be supported by default. However, if you want to lower the security bar and enable TLS 1.0 and 1.1, you can still do so, see KB 74951 for more information. TLS 1.0 and TLS 1.1 settings are preserved during upgrade.

VMware Product Compatibility

Note: The VMware Product Interoperability Matrix provides details about the compatibility of vRealize Operations Manager with VMware products.

Browser Support

This vRealize Operations Manager release supports all current Web browsers, although only the following browsers were tested with this release:

- Google Chrome: Version 76 and 77
- Mozilla Firefox: Version 68 and 69
- Microsoft Internet Explorer: Version 11 (limited support)
- Microsoft Edge 17 and 18
- Safari 12 and 13

Installing and Upgrading vRealize Operations Manager

Note: While upgrading to vRealize Operations Manager 8.0, the expected size of the root partition for Photon OS is 20 GB. For information about this requirement, see KB 75298.

Unless upgrading from vRealize Operations Manager 6.7 or above, it is imperative that you run the Pre-Upgrade Assessment tool. A pre-upgrade assessment report that is generated will provide you with the recommended replacements. This tool provides you with an impact analysis following the reduction of metrics in various versions of the product. For more details on using the Pre-Upgrade Assessment Tool, see KB 74952. It is always recommended to run the Pre-Upgrade Assessment tool before an upgrade.

Refer to the vRealize Operations Upgrade Center that has information about upgrading vRealize Operations. Refer to the VMware Lifecycle Product Matrix for information about supported versions of vRealize Operations Manager.

After upgrading, it is necessary to update Endpoint Operations agents. For more information, see KB 2137709 and KB 2138748.

The vRealize Operations Manager Information Center has detailed information about installation and software updates.

Refer to the vRealize Operations Manager vApp Deployment and Configuration Guide that provides guidance for a vRealize Operations Manager virtual appliance, before you install or update vRealize Operations Manager.

Upgrading to vRealize Operations Manager 8.0 resets out-of-the-box content as part of the software upgrade process even if the **Reset Default Content** button is unchecked during the upgrade. This implies that the user modifications made to default content such as alert definitions, symptom definitions, recommendations, policies, views, dashboards, widgets, and reports are overwritten. You need to clone or backup the content before you upgrade to vRealize Operations Manager 8.0.

Deploy vSphere with Operations Management (any edition) and vRealize Operations Standard together in one deployment.

Deploy vCloud Suite/vRealize Suite Standard, Advanced, or Enterprise and vRealize Operations Advanced or Enterprise edition together in one deployment.

Note: You can also install vRealize Operations Manager by using vRealize Suite Lifecycle Manager. For more information, see Creating an Environment. To automate installation, configuration, upgrade, patch, configuration management, drift remediation and health from within a single pane of glass, you can use vRealize Suite Lifecycle Manager. If you are a new user, click here to install vRealize Suite Lifecycle Manager. This provides IT managers or cloud admin resources to focus on business-critical initiatives, while improving time to value (TTV), reliability, and consistency.

See the Installation and Upgrade Issues section for issues related to installing vRealize Operations Manager or updating the software.

Resolved Issues

- **The compliance score differs on different analytics nodes in vRealize Operations Manager**

  The user interface of different analytic nodes shows different scores for Compliance for all seven compliance policies. For more information, see KB 70665.

- **The state of a service in a non-existing state remains as is even when it starts collecting data**

  If you edit the configuration of a service in a non-existing state, the service remains in a non-existing state even when it starts collecting data.

- **Advanced filtering conditions are ignored in the Environment Status widget**

  In the Environment Status widget, the advanced filtering conditions are ignored if an option is selected in the tag filter.

- **Inconsistent tag violations in the Workload Optimization page**

  When there is more than one tag assigned to a cluster and cluster-based intent is enabled, there is an inconsistent tag violation in the Workload Optimization page.

- **The Logs tab displays a message that states that vRealize Operation Manager is not integrated with Log Insight**

  If the VMware vRealize Log Insight Management Pack has not been activated from the Administration > Solutions > Repository page, the Logs tab displays a message.

- **Application services are in a stopped state when you start an agent during application monitoring**

  The application services activated in vRealize Operations Manager 7.0 are in a stopped state after you stop and then start an agent. This occurs when vRealize Operations Manager is upgraded to 7.5 and vRealize Application Remote Collector is upgraded to 7.5.

- **After you upgrade from VMware Application Proxy 1.1 to vRealize Application Remote Collector 7.5, services are not discovered**

  After you upgrade from VMware Application Proxy 1.1 to vRealize Application Remote Collector 7.5, even if the application services are running, vRealize Application Remote Collector does not discover them.

- **Agent Installation on Windows Server 2012 fails**

  You cannot install agents on Windows Server 2012 if you have Visual C++ older than version 14.

- **Objects such as images and icons related to the Management Pack for vRealize Orchestrator are not displayed**

  After you upgrade vRealize Operations Manager, if you scale a vRealize Operations Manager cluster with the Management Pack for vRealize Orchestrator 2.0 installed and add another vRealize Operations node, some objects such as images and icons related to the Management Pack for vRealize Orchestrator 2.0 are missing.

- **VVOL datastores are masked**

  If a VM, host, cluster, datacenter, or vCenter Server object with VVOL datastores is selected, an incorrect datastore count appears on the Environment Objects Map or the Troubleshooting All Metrics page. And if a VM is deployed on a VVOL datastore, raw or derived metrics may be missing.

Known Issues

The known issues are grouped as follows.

- Installation and Upgrade Issues
- General Issues
- User Interface Issues

Installation and Upgrade Issues

- **Batch installation ignores the custom certificate**

  During a multi-node cluster deployment, the deployment wizard ignores the custom certificate even if it is provided and uses the default certificate.

  Workaround: None

- **The Take Node(s) Offline wizard appears when you try to bring an offline RC node online**

  When you try to bring an RC node back online after having just taken it offline, the **Take Node(s) Offline** wizard appears when you click the **Take Node Offline/Online** button, instead of the **Take Node(s) Online** wizard as expected.

  Workaround: If the node state still displays as **Running** or the status is still **Online** after having taken it offline, wait a few moments and then manually refresh the data in the view from the top menu to get the latest state of the node. After the correct state is displayed which is **Not Running**, the **Take Node Offline/Online** button will work as expected.

- **Node replacement fails while replacing all nodes in the fault domain**

  If the nodes that are replaced are not powered off, it might result in an unusable state of the cluster.

  Workaround: While replacing nodes in a CA enabled cluster, ensure that the nodes are powered off.

- **Nodes are marked as Configured instead of New**

  When the **Multiple Nodes Addition** wizard detects that a wrong admin password is provided, node addition is canceled, but new nodes are marked as Configured.

  Workaround: Redeploy the nodes and restart with a correct admin password.

- **Even if the cluster state is set to Failure, the cluster is functional**

  The state of the cluster is incorrectly set to Failure if you use the **Bring Online** button from the witness node.

  Workaround: Do not use the witness node to bring the cluster online.

- **Installation of a management pack fails on a newly added node**

  After you upgrade to vRealize Operations Manager 8.0, installation of a management pack fails on a newly added node.

  Workaround: Upgrade management packs to their latest version and then add a new node.

- **Upgrade to vRealize Operations Manager 8.0 fails for instances with Wavefront configuration**

  If you use vRealize Operations Manager 7.5 and earlier versions with Wavefront configured, you cannot upgrade to vRealize Operations Manager 8.0 as upgrade fails.

  Workaround: None

- **In a pure IPv6 environment, DNS servers are missing from the /etc/resolv.conf file**

  DNS servers are missing from the */etc/resolv.conf* file when a new node is deployed in a pure IPv6 environment. As a result, the node cannot resolve FQDNs to IP addresses.

  Workaround: With the help of your network administrator, manually set the DNS servers in the */etc/resolv.conf* file.

- **Upgrade might fail if any of the nodes are running on VMs with US/Pacific-New timezone**

  PostgreSQL database systems no longer support the US/Pacific-New timezone, which was just an alias for America/Los_Angeles timezone. If any of the vRealize Operations Manager nodes are running on VMs with US/Pacific-New timezone, upgrade might fail.

  Workaround: Change VM timezones from US/Pacific-New to America/Los_Angeles, and then upgrade.

General Issues

- **While monitoring applications, you cannot activate a plugin with the same fields till the plugin configuration is deleted**

  An error message is displayed in the user interface of vRealize Operations Manager that states the following: 'Failed to update resource: Resource with same key already exists'.

  Workaround: Manually delete the existing plugin configuration and then continue with the activation of the plugin. If the problem persists, delete the corresponding resource from the inventory.

- **The compliance score for a user with limited object visibility is the same as for a user with complete object visibility**

  The compliance score is calculated for objects that are not visible (not assigned) to the current user.

  Workaround: Complete the following steps:

  1. Create a custom group with objects visible (assigned) to the user.
  2. For that group, apply a policy in which the needed set of compliance alert definitions is enabled.
     If that set is enabled only in one active policy (the one that is applied to the custom group), the compliance benchmark based on those alert definitions will display the correct score.

- **Historical data is not displayed for application plugins if the vCenter PNID is modified**

  The historical data or data prior to changing the vCenter PNID is lost for the application plugins.

  Workaround: None

- **SharePoint service is not discovered with Service Discovery**

  Since IIS and SharePoint services have common ports, IIS takes the ports from SharePoint and the SharePoint service is not discovered with service discovery.

  Workaround: None

- **The status of a few plugins is Unknown after vRealize Application Remote Collector and vRealize Operations Manager is upgraded from 7.5 to 8.0**

When you upgrade vRealize Application Remote Collector and vRealize Operations Manager from 7.5 to 8.0, the **Unknown** icon is displayed along with a gray icon.

Workaround: Reactivate the plugin.

- **Upgrade from vRealize Operations Manager 7.5 to 8.0 results in a change in the license cost driver**

  When you upgrade from vRealize Operations Manager 7.5 to 8.0, there is a change in the license cost driver between the **Summary** page and the **License Cost Driver** page.

  Workaround: You can set the cost with the old value, which is $365, in the **License Cost Driver** page.

- **Execute Script and Get Top Processes actions do not work from the Inventory > Objects page**

  After Service Discovery is configured and you navigate to the **Inventory > Objects** page, select any VM for which Service Discovery is in the Collecting state with a Data Receiving status. Run the Execute Script and Get Top Processes actions for the VM. Incorrect windows are displayed.

  Workaround: If a VM is selected from the **Inventory > Objects** page, click **Show Detail** from the toolbar. You will see the VM's **Summary** page from where you can run the Execute Script and Get Top Processes actions.

- **vRealize Automation 8.x stops collecting data**
  1. If vRealize Automation 8.x services have stopped, data is not collected.
  2. When vRealize Automation 8.x services are running, data is not collected intermittently.

  Workaround:

  1. Start vRealize Automation 8.x services and ensure that all the vRealize Automation 8.x services are running. Wait for about 20 mins.
  2. Restart the vRealize Automation 8.x adapter instance.

- **While installing an application monitoring agent using an Internet Explorer browser, a message is displayed asking the user to save or open a json file locally**

  When you install an application monitoring agent and upload a credentials csv file using Internet Explorer, the browser displays a message asking you to save or open a json file locally. You will not be able to proceed to the next screen.

  Workaround: Use a different browser.

- **Additional cost displayed is zero even though there is a direct cost associated with the VM**

  If the vCenter Server configured with vRealize Automation 8.x was already monitored by vRealize Operations Manager and costs were computed, the cost is displayed as zero.

  Workaround: Cost will match the price from the next month when both get a fresh month-to-date start.

- **Collection for the Management Pack for Microsoft Azure fails when the network connection times out**

  When the Management Pack for Microsoft Azure sends a request to the Azure portal and the portal takes a longer time to read the request than the Azure SDK timeout value, collection for the adapter instance fails. Collection resumes when the network timeout issue is resolved or the Azure portal can read the request.

  Workaround: None

- **Change in the way Active Directory authentication source handles user names**

  Logging in to vRealize Operations Manager with a short name will be successful only if the user name's domain suffix matches the domain name specified in the **Base DN** option. Otherwise, the full user name with the domain suffix is required during login. For more information, see KB 68131.

  Workaround: To authenticate using short name, configure the Active Directory authentication source to use *samAccountName* for **Common Name**. You must re-import the Active Directory users and groups after setting the **Common Name** to *samAccountName*.

- **Objects such as images and icons related to the Management Pack for SDDC Health, Management Pack for OpenStack, and Management Pack for SRM are not displayed**

After you upgrade vRealize Operations Manager, if you scale a vRealize Operations Manager cluster with the Management Pack for OpenStack 5.0, or Management Pack for SRM 8.1, or Management Pack for SDDC Health 5.0 installed and add another vRealize Operations node, some objects such as images and icons related to the management packs are missing.

Workaround: Users with an instance of the Management Pack for OpenStack, or Management Pack for SRM, or Management Pack for SDDC Health must uninstall the management packs, before upgrading vRealize Operations Manager.

- **Cost computation is not supported for a VMware Cloud vCenter Server end point in vRealize Operations Manager 8.0**

  In vRealize Operations Manager 8.0, when you add a VMware Cloud vCenter Server end point and specify the cloud type as VMware Cloud on AWS, cost is not computed for the VMware Cloud vCenter Server end point, because the cost model is different from on-premises vCenter Servers.

  Workaround: The cost of infrastructure coming from VMware Cloud on AWS can be managed using the vRealize Operations Manager management pack for VMware Cloud on AWS.

- **Interactions in a distribution type of view, work only for the Current type of transformation**

  When you create a distribution type of view and select a transformation type that is not **Current**, the list view is not displayed.

  Workaround: Change the selected metric transformation to **Current** to see the list view. You can add the same metric as an additional column with a relevant transformation (for example, maximum) and view the result of the transformation in the list view.

- **Alerts from the vSAN adapter that correspond to vSAN health check tests are not canceled if the test is removed from the vSAN Health Service.**

  vRealize Operations Manager cannot detect and cancel deleted alerts.

  Workaround: Manually cancel the alert from the user interface of vRealize Operations Manager.

- **When using Internet Explorer 11 to access the Log Insight tab pages and dashboards, the data is blocked**

  When using Internet Explorer 11 to access the Log Insight tab pages and dashboards, data is blocked, and the page remains blank.

  Workaround: Use the Firefox or Chrome browser.

- **Generated reports may be blank**

  If you log in to vRealize Operations Manager with vCenter Server credentials and generate a report, the generated report is always blank.

  Workaround: None

User Interface Issues

- **The dashboard link cannot be opened when you use Internet Explorer on Windows 7**

  When you try to open a dashboard that is a shared URL, the page does not open.

  Workaround: You must not use Internet Explorer with Windows 7. Open the link using other browsers.

- **The Last Year option in the date picker is not intuitive**

  The Last Year option in the date picker indicates that the time range starts from the end of the previous month and goes back a year. It does not indicate a time range that spans one year from the current date or the whole previous year.

  Workaround: None

- **The filter menus in the Policies workspace step called Collect Metrics and Properties, do not work correctly**

  When you deselect an option from the State, KPI, or DT drop-down menus, the filter hides all attributes irrespective of their settings.

  Workaround: Save and reopen the policy.

A PDF report file might not include all data from a widget that has a scrollbar

When you generate a report that contains a custom dashboard with a widget that has a scrollbar, the downloaded PDF file might not include all the data in the widget.

Workaround: Increase the height of the widget in the dashboard to fit all the data.

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PLAINTIFF'S OPPOSITION

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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CIRBA INC. (d/b/a DENSIFY) and CIRBA IP, INC., Plaintiffs, v. VMWARE, INC., Defendant.	Civil Action No. 1:19-cv-00742-LPS JURY TRIAL DEMANDED

DENSIFY'S RESPONSE TO VMWARE'S MOTION IN LIMINE NO. 2 TO EXCLUDE ARGUMENT THAT SUBSEQUENT REMEDIAL MEASURE PROVES INFRINGEMENT OR WILLFULNESS

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After this litigation began, VMware removed a dashboard, the "Workload Utilization Widget," from its latest release of the accused products. Densify alleges that VMware's dashboard infringed the '367 patent. Now, VMware seeks to exclude evidence of its removal of this feature, alleging that Densify will use the evidence to show culpability. But this evidence is probative of several issues beyond culpability, including willfulness, damages, and for impeachment. VMware has scant authority for even applying Federal Rule of Evidence 407's ("Rule 407") remedial measures rule in the context of patent litigation, where the same policy concerns of not discouraging changes to prevent harm or injury do not apply. Accordingly, Densify should be permitted to use evidence of VMware's removal of the dashboard for all purposes, or at a minimum for purposes other than for proving infringement.

Rule 407 limits the admission of evidence of "measures . . . taken that would have made an earlier injury or harm less likely to occur" to show "negligence; culpable conduct; a defect in a product or its design; or a need for a warning or instruction." Rule 407, however, does not limit the use of such evidence for non-culpability purposes, such as damages and impeachment. VMware's attempt to exclude this evidence in all contexts and for all purposes is overbroad. Evidence of subsequent remedial measures that might be inadmissible to show culpability is still admissible "for another purpose, such as impeachment or—if disputed—proving ownership, control, or the feasibility of precautionary measures." FED. R. EVID. 407. In this case, there are at least six purposes for which this evidence is admissible.

[redacted]. *See* Deposition of Chandra Prathuri, Nov. 26, 2019, at 190:24-194:7.[1]

[1] Mr. Prathuri's testimony is attached to this motion as Exhibit A. It is noteworthy that Mr. Prathuri, VMware's Rule 30(b)(6) deponent on this subject, did not testify that the (continued . . .)

As customer usage of the accused features is a key issue in this case, Densify is entitled to present evidence as to the reasons why VMware turned off this particular feature. Second, VMware's ability to turn off accused features has been contested. *See* FED. R. EVID. 407; *Sell v. Ingersoll-Rand Co.*, 136 F. App'x 545, 547 (3d Cir. 2005) (evidence admitted to show feasibility of alternative design). Third, as VMware has itself stated, the removal of the dashboard could be relevant to damages. 23 Charles Alan Wright & Arthur R. Miller, Federal Practice and Procedure, Evidence § 5290 (2d ed.). Fourth, the evidence is admissible to show the state of VMware's products at the time of infringement. *Id.* Fifth, the evidence is admissible to show willfulness, which courts have found is distinct from "culpable conduct" within the meaning of Rule 407. *See Duhn Oil Tool, Inc. v. Cameron Int'l Corp.*, No. 1:05-CV-01411 OWW, 2011 WL 121547, at *1 (E.D. Cal. Jan. 13, 2011). Finally, evidence used for impeachment is admissible under Rule 407. *Complaint of Consolidation Coal Co.*, 123 F.3d 126, 136 (3d Cir. 1997). To the extent that VMware intends to offer testimony as to why it turned off this feature, Densify is entitled to introduce evidence, particularly Mr. Prathuri's deposition testimony, that contradicts that assertion.

In addition, there is little authority for applying Rule 407 even as to culpability in the context of patent infringement cases because the policy concerns that undergird the rule are inapplicable here. *See Kowalski v. Anova Food, LLC*, 2015 WL 1119411, at *3 (D. Haw. Feb. 18, 2015) ("Courts have held in patent infringement cases that the design changes are not 'subsequent remedial measures' within the meaning of Fed. R. Evid. 407."). VMware points to a handful of

[redacted] – instead, he provided other reasons. Prathuri Depo at 192:3-21. Two days later, VMware's counsel sent an email stating that Mr. Prathuri now intends to testify at trial [redacted]." Exhibit B. Whether Mr. Prathuri falsely testified under oath and why he changed his testimony is, of course, something the jury is entitled to hear about.

cases that apply Rule 407 in the context of patent infringement but has not identified any binding Third or Federal Circuit precedents that compel that result. The one case that VMware cites from the Federal Circuit, *Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1221 (Fed. Cir. 1995), did not explicitly find that Rule 407 applied in the context of patents – it avoided that question entirely because it found that the proposed evidence was not a subsequent remedial measure. The only other case that VMware cites that was decided within the courts of the Third Circuit, *Johns Hopkins Univ. v. Alcon Labs. Inc.*, 2018 WL 4178159, at *19 (D. Del. Aug. 30, 2018), found that Rule 407 did not apply to measures that were not actually taken.

Here, Rule 407 should not apply in patent infringement contexts such as this because the policy rationale for the rule does not apply. Rule 407 "rests on a social policy of encouraging people to take, or at least not discouraging them from taking, steps in furtherance of added safety." FED. R. EVID. 407, Notes of Advisory Committee on Proposed Rules. In negligence and products liability, there may be harm that, while not giving rise to liability, could still be avoided in the future, so the rule eliminates disincentives to making safety improvements. But patent infringement in the context of this case is different – it does not relate to safety; there is no policy reason to exclude evidence that shows that a party tended to believe that its conduct may have been culpable. *See Abbott Labs. v. Baxter Pharm. Prod., Inc.*, 2004 WL 2496459, at *5 (N.D. Ill. Nov. 3, 2004).

Accordingly, Densify respectfully requests that the Court deny VMware's Motion in Limine related to subsequent remedial measures, or at a minimum, rule only that this evidence cannot be used to prove infringement.

December 30, 2019

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EXHIBIT A

Redacted In Its Entirety

EXHIBIT B

Redacted In Its Entirety

DEFENDANT'S REPLY

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CIRBA INC. (d/b/a DENSIFY) and CIRBA IP, INC., *Plaintiffs*, v. VMWARE, INC., *Defendant*.	C.A. No. 19-742-LPS

VMWARE'S REPLY IN SUPPORT OF ITS MOTION IN LIMINE NO. 2 TO EXCLUDE ARGUMENT THAT SUBSEQUENT REMEDIAL MEASURE PROVES INFRINGEMENT OR WILLFULNESS

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Cirba misunderstands VMware's motion *in limine*. VMware does not seek to "exclude evidence of the removal" of the accused dashboard. VMware expressly stated that such evidence may be relevant if used for proper purposes. (Mot. at 1.) VMware merely seeks to prevent Cirba from improperly suggesting or arguing that its removal shows that VMware's prior conduct was culpable—as Cirba states it intends to do in its opposition—in violation of Rule 407. (Opp. at 2.)

Rule 407 on its face applies to all measures "that would have made an earlier injury or harm less likely to occur." Fed. R. Evid. 407. Congress has not exempted patent litigation from the reach of Rule 407 or limited it to safety concerns. "'Culpable conduct' as used in Fed. R. Evid. 407 has a broader scope than just negligent conduct, and we think its scope broad enough to reach patent infringement actions." *Vardon Golf Co., Inc. v. BBMG Golf Ltd.*, 156 F.R.D. 641, 652 (N.D. Ill. 1994); *see also Interactive Health LLC v. King Kong USA, Inc.*, No. CV 06-1902-VBF(PLAx), 2008 WL 11339129, at *7 (C.D. Cal. July 24, 2008) (explaining that, although "the advisory notes[] point to issues of safety, courts have applied the rule to non-accident events," and then applying Rule 407 in a patent case); *General Motors Corp. v. Keystone Automotive Indus., Inc.*, 453 F.3d 351, 357 n.1 (6th Cir. 2006) (approving exclusion of use remedial measures for the purpose of showing intent to copy trademark under Rule 407). To consider remedial acts as evidence of culpability would thwart both the policy behind Rule 407 and the Federal Circuit's policy of encouraging design-arounds. *WMS Gaming, Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1355 (Fed. Cir. 1999).

As VMware previously explained (Mot. at 2), numerous courts have excluded the use of remedial measures to show culpability in patent cases. Delaware case law indicates that Rule 407 applies to remedial measures taken in patent cases (*id.*) and Cirba only cites to three cases, all outside the Third Circuit, to the contrary. VMware's motion should be granted.

Dated: January 2, 2020

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Exhibit 11F

VMWARE, INC'S MOTION IN LIMINE NO. 3

TO EXCLUDE EVIDENCE OR ARGUMENT RELATED TO PRE-SUIT KNOWLEDGE OF THE ASSERTED PATENTS AND INDIRECT AND WILLFUL INFRINGEMENT

DEFENDANT'S OPENING MOTION

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CIRBA INC. (d/b/a DENSIFY) and CIRBA IP, INC., *Plaintiffs*, v. VMWARE, INC., *Defendant*.	C.A. No. 19-742-LPS **HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY**

VMWARE'S MOTION IN LIMINE NO. 3 TO EXCLUDE EVIDENCE OR ARGUMENT RELATED TO PRE-SUIT KNOWLEDGE OF THE ASSERTED PATENTS AND INDIRECT AND WILLFUL INFRINGEMENT

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As Cirba lacks evidence to prove VMware's pre-suit knowledge, it should be precluded from presenting evidence or arguments related to willful infringement and pre-suit indirect infringement. [redacted] Additionally, the citation of the '687 patent during prosecution of VMware's patent applications is legally insufficient to show pre-suit knowledge.

I. THE COURT SHOULD EXCLUDE EVIDENCE AND ARGUMENTS RELATED TO VMWARE'S PRE-SUIT KNOWLEDGE BASED ON THE [redacted]

[redacted]

(Ex. 1 at ¶ 4(f) (emphasis added).) [redacted] (*Id*. ¶ 6(e) [redacted] emphasis added).) [redacted] This was particularly important to

VMware, since—as it expressly informed Cirba—[redacted]. (*See, e.g.*, Ex. 2 at DSY00006195.)

Consistent with these terms, [redacted] (*See, e.g.,* Ex. 3 at VMW00011092-93 (May 30, 2015 list); Ex. 4 at VMW00011790 (June 8, 2015 list).) [redacted] (*See, e.g.,* Ex. 5 (June 1, 2015 e-mail from [redacted] Ex. 6 (July 4, 2015 e-mail by Prathuri following up on [redacted]" including the '687 patent); Ex. 7 at 174:25-175:12; 177:12-17 ([redacted] Ex. 8.)

[redacted] all of these communications and related assessment should be excluded. *See IBM Corp. v. Groupon, Inc.*, C.A. No. 16-122-LPS, at 2-3 (D. Del. June 15, 2018) (excluding pre-suit communications based [redacted] prohibiting plaintiff from seeking "enhance[d] damages by asserting willful patent infringement") (*see* Ex. 9). [redacted] And in view of Cirba's agreement to these provisions, and VMware's reasonable reliance on that agreement, it would be unfair and highly prejudicial for Cirba to present the prohibited evidence for a prohibited purpose. *See* Fed. R. Evid. 403.

II. THE COURT SHOULD EXCLUDE EVIDENCE AND ARGUMENTS RELATED TO VMWARE'S ALLEGED WILLFUL INFRINGEMENT AND PRE-SUIT INDIRECT INFRINGEMENT

A finding of willful infringement requires pre-suit knowledge of the alleged infringement. *See Valinge Innovation AB v. Halstead New Eng. Corp.*, C.A. No. 16-1082-LPS-CJB, 2018 WL 2411218, at *9-12 (D. Del. May 29, 2018) (pre-suit knowledge required for willful infringement), *adopted*, D.I. 295 (D. Del. Nov. 6, 2018) (*see* Ex. 10); *3Shape A/S v. Align Tech., Inc.*, C.A. No. 18-886-LPS-CJB, 2019 WL 1416466, at *4 (D. Del. Mar. 29, 2019) (willful infringement requires knowledge of alleged infringement "as of the time of the claim's filing") (quoting *Valinge* with approval); *Express Mobile, Inc. v. DreamHost LLC*, C.A. No. 18-1173-RGA, 2019 WL 2514418, at *2 (D. Del. June 18, 2019) (same)*; but see IOENGINE, LLC v. PayPal Holdings, Inc.*, C.A. No. 18-452-WCB, 2019 WL 330515, at *7 n.4 (D. Del. Jan. 25, 2019). A finding of pre-suit indirect infringement also requires knowledge of the alleged infringement. *Commil USA, LLC v. Cisco Sys., Inc.*, 135 S. Ct. 1920, 1926-28 (2015).

Barred from presenting evidence relating to the parties' failed investment and acquisition discussions, Cirba may attempt to rely on the citation to the '687 patent during prosecution of VMware's patent applications as evidence of pre-suit knowledge. But this Court has held that such citations are "legally insufficient" to show pre-suit knowledge "for willfulness purposes." *See, e.g., Intellectual Ventures I, LLC v. Symantec Corp.*, 234 F. Supp. 3d 601, 611 (D. Del. 2017); *see also DermaFocus LLC v. Ulthera, Inc.*, 201 F. Supp. 3d 465 (D. Del. 2016) (same). Moreover, mere knowledge of a patent is insufficient to show knowledge of the alleged infringement for indirect infringement purposes. *Commil*, 135 S. Ct. at 1926-28.

Cirba points to no other evidence that could support a finding of pre-suit knowledge of the alleged infringement. Therefore, Cirba should be precluded from presenting evidence or arguments related to willful infringement and pre-suit indirect infringement.

Dated: December 23, 2019

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EXHIBIT 1

Redacted In Its Entirety

EXHIBIT 2

Redacted In Its Entirety

EXHIBIT 3

Redacted In Its Entirety

EXHIBIT 4

Redacted In Its Entirety

EXHIBIT 5

Redacted In Its Entirety

EXHIBIT 6

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EXHIBIT 7

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EXHIBIT 8

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EXHIBIT 9

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

INTERNATIONAL BUSINESS MACHINES CORPORATION,	:	
Plaintiff,	:	
v.	:	C.A. No. 16-122-LPS
GROUPON, INC.	:	
Defendant.	:	

MEMORANDUM ORDER

At Wilmington this **15th** day of **June, 2018**, having reviewed the proposed pretrial order and exhibits to it (D.I. 305) ("PTO"),[1] **IT IS HEREBY ORDERED** that:

1. Plaintiff International Business Machines Corporation's ("IBM" or "Plaintiff") motion in limine ("MIL") No. 1, to exclude any reference, argument, evidence, or testimony concerning the workload or disparagement of the PTO, is GRANTED IN PART and DENIED IN PART. As Defendant Groupon, Inc. ("Groupon" or "Defendant") agrees (*see* Def. Resp. at 1), neither party will be permitted to disparage the PTO.[2] The parties may, however, present evidence and argument consistent with what the jury will learn from the Federal Judicial Center

[1]The pretrial conference ("PTC") is scheduled for June 18 and a jury trial will begin on July 16. Still pending before the Court are the parties' motions for summary judgment. Nothing in this Memorandum Order should be taken as a ruling (or even an indication of how the Court will rule) on any summary judgment motion.

[2]It follows that IBM will also not be permitted to elicit disparaging comments about the PTO from Groupon's witnesses, notwithstanding IBM's evident belief that such disparagement is relevant to assessing the credibility of such witnesses. (*See* Pl. Reply at 1 n.1; *see also* Def. Resp. at 1 n.1)

video (e.g., "Examiners have a lot of work to do, and no process is perfect."): for example, the PTO has a heavy workload and all institutions make mistakes. Neither party, however, may present evidence or argument to the effect that the PTO and/or individual examiners have an incentive (financial or otherwise) to issue patents. The evidence and argument the Court is permitting is probative of the validity of the patents-in-suit, which is a subject of the forthcoming trial, and that probative value is not substantially outweighed by unfair prejudice or any other concern of Federal Rule of Evidence 403.

2. IBM's MIL #2, to preclude reference, argument, evidence, or testimony concerning IBM's allegedly declining revenue or profits, is DENIED. IBM evidently intends to introduce itself to the jury, including presenting evidence as to its "current profits or revenue" (Pl. Reply at 1 n.7), history of innovation, investment in research and development, and patent portfolio. Evidence of IBM's purportedly declining revenues is probative to place IBM's "background" evidence in context. Issues relating to IBM's licensing and enforcement of its patent portfolio may also be pertinent to non-obviousness and damages. None of the concerns of Rule 403 – including unfair prejudice and risk of jury confusion – substantially outweigh the probative value.

3. IBM's MIL #3, to preclude Groupon from offering evidence or argument relating to opinions or advice of counsel regarding Groupon's defenses prior to this lawsuit, and Groupon's MIL #1, to preclude IBM from presenting reference, evidence, argument and testimony regarding the substance of the parties' pre-suit exchanges and failure to obtain advice of counsel, are both GRANTED. IBM filed this lawsuit on March 2, 2016. Prior to the lawsuit, the parties entered into a Confidential Disclosure Agreement ("Agreement"), providing (among

other things) that IBM "ha[s] not demanded, nor do[es] [it] expect [that Groupon] will cease or terminate any" use and provision of its products and services and further providing that IBM "shall not seek to enhance [] damages by asserting willful patent infringement" with respect to the period of August 12, 2014 through June 30, 2015. The substance of pre-suit communications occurring during this period is not relevant to any issue being litigated at the forthcoming trial (including willfulness and indirect infringement), particularly given that Groupon has stipulated to the dates on which it became aware of each of the patents-in-suit. Even were there probative value, it would be substantially outweighed by the unfair prejudice to Groupon, which reasonably relied on the parties' Agreement in (among other things) choosing not to assert reliance on advice of counsel as a defense to willfulness. Additionally, admitting the substance of the parties' pre-suit communications would be inconsistent with Federal Rule of Evidence 408. As IBM recognizes, 35 U.S.C. § 298 provides: "The failure of an infringer to obtain the advice of counsel . . . may not be used to prove that the accused infringer willfully infringed." Groupon is precluded from presenting evidence that it obtained advice of counsel given its decision not to assert reliance on advice of counsel in a timely manner in the course of this litigation.

4. Groupon's MIL #2, to preclude IBM from referencing the presumption of patent validity, is DENIED. While this is plainly an issue on which reasonable jurists can (and do) differ, the undersigned Judge's view is that (at least in this case, as in most, if not all, cases) it is reasonable and appropriate to provide the jury with some brief explanation for why the burden of proving invalidity is different and greater than the burden of proving infringement and damages. Limited references, particularly in the Court's jury instructions, to the presumption of validity, do not pose a substantial risk of jury confusion or unfair (much less "irreparabl[e]," *see* Def. MIL #2

at 2) prejudice to Groupon.

5. Groupon's MIL #3, to "prohibit IBM Corp. from presenting any evidence, reference, argument, or testimony regarding any theory of infringement under the doctrine of equivalents, which would ensnare prior art," is DENIED. Groupon characterizes its motion as presenting a question of law for the Court, not a factual dispute for the jury. Accepting that characterization, its request would be more appropriate (and timely) on a motion for summary judgment or post-trial motion. Further, Groupon's motion appears to implicate disputed questions of fact and may mischaracterize IBM's theory of infringement by equivalents (*see* Def. Response at 8).

Having identified additional disputes in the PTO, **IT IS FURTHER ORDERED** that:

1. The Court will separately determine, in the context of reviewing the parties' proposed *voir dire* and preliminary jury instructions, what it will tell the jury about this case. Accordingly, the parties' disputes at PTO pages 2-3 are moot.

2. IBM has adequately provided notice of and preserved its right to pursue post-verdict damages. (*See* PTO at 4-5)[3] However, issues related to post-verdict damages, enhanced damages, injunctive relief, and whether this is an "exceptional case" will be addressed to the Court following trial, if at all. (*See also* PTO at 17-20)

3. Unless the parties reach an alternative agreement, the order of the presentation of evidence will follow the burden of proof. (PTO at 8-9) Specifically:

Phase I: Plaintiff case-in-chief on infringement and damages

---

[3]The Court recognizes that Groupon has filed a motion to strike a report from IBM's damages expert. (D.I. 300) IBM has not yet responded to the motion.

Phase II: Defendant response on infringement and damages, and case-in-chief on invalidity and other affirmative defenses

Phase III: Plaintiff rebuttal on infringement and damages, and response on invalidity and other affirmative defenses

Phase IV: Defendant rebuttal on invalidity and other affirmative defenses

There will only be three closing arguments: Plaintiff, Defendant, and Plaintiff rebuttal.

4. When a witness is called to testify at trial by deposition, the party calling the witness shall provide the Court with three (3) copies of the transcript of the portions that will be read or played.

5. Groupon's proposal that witnesses may only be called once (PTO at 11 & n.10) is REJECTED. The Court will not impose a categorical rule that no witness may be called more than once. However, should a witness' schedule pose a true hardship, the Court will handle requests to alter the otherwise desired order of witness testimony on a case-by-case basis.

6. Groupon's proposals on pages 13-14 are REJECTED. Although most or all of these proposals appear reasonable, IBM may be asserting objections to exhibits based on authenticity. The parties shall be prepared to discuss at the PTC their proposals for how and when such objections will be disclosed with specificity and how and when the Court should resolve them. (*See also* PTO at 37-38)

7. Groupon's request for a bifurcated trial (PTO at 20-24) is DENIED. Groupon's proposal would guarantee the need for two trials: one on three patents-in-suit and a second one on the '346 patent, a patent with respect to which IBM asserts some claims that are presently at issue in IBM's appeal from the PTAB ruling and also asserts some claims that are not involved in

the PTAB or appellate proceedings. By contrast, denying bifurcation creates the possibility of only one trial (if, for instance, (a) Plaintiff fails to prove infringement of the remaining asserted claims of the '346 patent and/or Groupon proves those claims to be invalid, and (b) the Federal Circuit affirms the PTAB's invalidation of other asserted claims of the '346 patent). There is no basis whatsoever for Groupon's alternative request that the Court stay this case until after the Federal Circuit decides the pending appeal. (*See* PTO at 22)

8. The parties' request (PTO at 26) for twenty (20) or twenty-six (26) hours per side for their trial presentations is REJECTED. Considering the nature, number, and scope of the parties' disputes, the Court finds that the parties can fully and fairly present their case to the jury in no more than eighteen (18) hours. Nevertheless, at the pretrial conference, the Court will consider any request that it allocate up to twenty (20) hours per side.

9. Trial will be held at some or all of the following times, subject to the time limits on the parties' trial presentations:

a. Monday, July 16: 8:30 a.m. to 4:30 p.m.

b. Tuesday, July 17: 8:30 a.m. to 4:30 p.m.

c. Wednesday, July 18: 8:30 a.m. to 4:30 p.m.

d. Thursday, July 19: 8:30 a.m. to 4:30 p.m.

e. Friday, July 20: 8:30 a.m. to 3:00 p.m.

f. Monday, July 23: 8:30 a.m. to 4:30 p.m.

g. Tuesday, July 24: 8:30 a.m. to 4:30 p.m.

h. Wednesday, July 25: 8:30 a.m. to 1:00 p.m.

i. Thursday, July 26: 8:30 a.m. to 1:00 p.m.

j. Friday, July 27: 8:30 a.m. to 4:30 p.m.

10. The parties shall be prepared to discuss at the PTC their requests that the Court close the courtroom for evidence and argument relating to sourcecode (Groupon's position) and/or licensing (IBM's position). (*See* PTO at 26-32) The Court is inclined to deny both requests and not to close the courtroom for any portion of the forthcoming trial.

11. The Court ADOPTS Groupon's proposal for reduction of asserted claims and prior art. (*See* PTO at 32-37) IBM shall reduce the number of asserted claims to no more than sixteen (16) in total and no more than five (5) for any particular patent, while Groupon shall assert invalidity defenses based on no more than sixteen (16) total prior art references and no more than five (5) such references for any particular patent (with references defined as Groupon proposes). IBM's alternative proposal – to limit the "theories" Groupon may assert – is not warranted in this case, where it appears Groupon has already reasonably streamlined its case.

12. IBM's request to strike documents from the exhibit list that were produced after Groupon's deadline to serve its exhibit list (PTO at 38-39) is ADOPTED, to the extent that neither party may introduce into evidence at trial any document that was not produced during discovery, absent a showing of good cause and approval of the Court. The Court is not making a determination as to the two specific documents identified in the PTO.

HONORABLE LEONARD P. STARK
UNITED STATES DISTRICT JUDGE

EXHIBIT 10

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

VALINGE INNOVATION AB,	:	
	:	
Plaintiff,	:	
	:	
v.	:	Civil Action No. 16-1082-LPS-CJB
	:	
HALSTEAD NEW ENGLAND CORP., ET AL.,	:	
	:	
	:	
Defendants.	:	

ORDER

WHEREAS, Magistrate Judge Burke issued a Report and Recommendation (D.I. 171) on May 29, 2018;

WHEREAS, the Report and Recommendation recommends that the Court GRANT Defendants' Motion to Dismiss (D.I. 34).

WHEREAS, any Objections to the Report and Recommendation were to be filed by June 12, 2018;

WHEREAS, no party has filed an Objection to the Report and Recommendation;

WHEREAS, the Court concludes that the Report and Recommendation should be adopted for the reasons stated by Magistrate Judge Burke;

NOW THEREFORE, IT IS HEREBY ORDERED that the Report and Recommendation (D.I. 171) is **ADOPTED**, and Defendants' Motion to Dismiss (D.I. 34) is GRANTED without prejudice to the extent that it seeks dismissal of Valinge's claims against both Defendants for willful

infringement of the asserted patents.

Dated: November 6th, 2018

UNITED STATES DISTRICT JUDGE

PLAINTIFF'S OPPOSITION

IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE

CIRBA INC. (d/b/a DENSIFY) and CIRBA IP, INC., Plaintiffs, v. VMWARE, INC., Defendant.	Civil Action No. 1:19-cv-00742-LPS JURY TRIAL DEMANDED

DENSIFY'S RESPONSE TO VMWARE'S MOTION IN LIMINE NO. 3 TO EXCLUDE EVIDENCE OR ARGUMENT RELATED TO PRE-SUIT KNOWLEDGE OF THE ASSERTED PATENTS AND INDIRECT AND WILLFUL INFRINGEMENT

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VMware seeks to keep from the jury the facts of its own conduct. In support of this extraordinary remedy, it relies upon [redacted] It does not grant VMware impunity for all its pre-suit actions. Densify's willful infringement case is not based merely on [redacted] — it is based on VMware's theft of its technology. VMware's overly broad motion to preclude Densify's entire willfulness and pre-suit indirect infringement case is deeply flawed.

First, VMware's motion substantively is an undercover summary judgment motion. As a threshold matter, VMware seeks dismissal of Densify's enhanced damages and pre-suit indirect infringement claims based on the affirmative defense of contractual waiver. But VMware never even pleaded this as an affirmative defense, as expressly required by Fed. R. Civ. P. 8. *See* D.I. 150 at 27-31. Further, "[a]n in limine motion is not a proper vehicle for a party to ask the Court to weigh the sufficiency of the evidence to support a particular claim or defense, because [t]hat is the function of a motion for summary judgment, with its accompanying and crucial procedural safeguards." *Bowers v. Nat'l Collegiate Athletic Ass'n*, 563 F. Supp. 2d 508, 532 (D.N.J. 2008) (quotation omitted). In other words, a motion in limine is not a backdoor, 3-page summary judgment motion. *See, e.g.*, *Minemyer v. B-Roc Representatives, Inc.*, 2011 WL 1113146, at *1 (N.D. Ill. Mar. 23, 2011) (denying motion in limine to exclude all evidence of willfulness because "[i]nstead of asking for evidentiary rulings, [defendants] ask for substantive rulings on issues in this case," which "is not a proper motion in limine at all, but a summary judgment motion"). None of the cases VMware cites regarding the sufficiency of the evidence outside the scope [redacted] concerns a motion in limine. *See* VMware Mot. at 3. Rather, those cases concern motions to dismiss.[1]

[1] VMware's Motion in Limine should be denied as raising an unasserted affirmative defense

Second, [redacted]

Third, [redacted].[4] VMware impermissibly attempts to expand the narrow scope of [redacted] significant ways. To begin with, ¶[redacted] not VMware's independent research into Densify's patent holdings. In VMware's exhibit 6, [redacted], none of which were disclosed by Densify.

Further, [redacted]. It does not bar use of [redacted]

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of waiver, and as an unauthorized request to challenge the sufficiency of the evidence. Such a challenge can be taken up in post-trial motions. Densify cannot brief the sufficiency of evidence in the entire case within the 3-page limit, so in all events additional briefing is requested if sufficiency of the evidence, particularly the evidence beyond [redacted], is to be taken up pretrial.

[2] This language is simply not comparable to the contractual language in *IBM v. Groupon*, relied upon by VMware, where the plaintiff agreed as part of pre-filing settlement negotiations not to "seek to enhance [] damages by asserting willful patent infringement" for actions during a set date range. VMware Ex. 9.

[3] The [redacted] This brief addresses the application of the [redacted]

[4] As a form contract, it is construed against the drafter, VMware. *See* Ex. A (VMware sending its form "investment-oriented [redacted]"); *SPM Corp. v. M/V Ming Moon*, 965 F.2d 1297, 1302 (3d Cir. 1992) (an "ambiguous form contract . . . must be construed against its drafter").

[redacted]. In short, [redacted] not what VMware did with the information. VMware's broader interpretation that this provision gave it permission to take Densify's technology — and that Densify waived any recourse — is unsupported. There is no manifestation of such an intent. The parties could have simply stated that Densify waived all rights to patent infringement willfulness damages or other relief, but they chose not to do so.

Moreover, [redacted] Instead, it precludes only certain specific uses of that fact – *e.g.*, to show [redacted] short, even evidence that constitutes [redacted] for any purpose *other than* those specifically listed.

Finally, [redacted]. *See* VMware Ex. 1, ¶5. Any disclosures outside of that narrow window are not addressed. *See, e.g.*, *ZiiLabs Inc., Ltd. v. Samsung Elecs. Co. Ltd.*, 2015 WL 8293585, *2 (E.D. Tex. Dec. 8, 2015).

In sum, [redacted] (not VMware obtaining it from other sources, or what it did with that information), [redacted] It does not bar all use of this evidence, and provides no basis to exclude any of the exhibits or arguments identified by VMware.

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Exhibit A

Redacted In Its Entirety

DEFENDANT'S REPLY

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CIRBA INC. (d/b/a DENSIFY) and CIRBA IP, INC., *Plaintiffs*, v. VMWARE, INC., *Defendant*.	C.A. No. 19-742-LPS **HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY**

VMWARE'S REPLY IN SUPPORT OF ITS MOTION IN LIMINE NO. 3 TO EXCLUDE EVIDENCE OR ARGUMENT RELATED TO PRE-SUIT KNOWLEDGE OF THE ASSERTED PATENTS AND INDIRECT AND WILLFUL INFRINGEMENT

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VMware's motion does not seek summary judgment. Nor is VMware asserting an affirmative defense of contractual waiver. Similar to *IBM Corp. v. Groupon, Inc.*, VMware seeks to exclude evidence related to pre-suit knowledge based on [redacted]. C.A. No. 16-122-LPS, at 2-3 (D. Del. June 15, 2018) (Mot. Ex. 9). Cirba's argument that [redacted] "provides no basis to exclude any of the exhibits or arguments identified by VMware" flies in the face of the [redacted] plain language, which Cirba does not discuss.

Cirba is wrong that the [redacted] is "exceedingly narrow." Although Cirba argues that the [redacted] "applies only to [Cirba's] disclosures, not what VMware did with the information," that is contrary to the [redacted] express language. The parties specifically entered into the [redacted] for the [redacted]" (Mot. Ex. 1 at VMW00057211.) As a result, the [redacted] but also "[redacted]." (*Id*. at VMW00057212.) The [redacted] and VMware's related evaluation as "evidence or proof" of VMware's pre-suit knowledge [redacted] (*Id*.)

Cirba's interpretation would render the [redacted] toothless. Cirba offers no plausible explanation why the evidence or arguments identified by VMware, including Cirba's [redacted] (Mot. Exs. 3 and 4), should not be excluded. [redacted]

As Cirba identifies no other evidence supporting pre-suit knowledge of the alleged infringement, it should be precluded from presenting any evidence or arguments related to willful infringement and pre-suit indirect infringement.

Dated: January 2, 2020

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